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THE HEALTH OF THE AUSTRALIAN COMMUNITY.[1]

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"WHEN I use a word", it was said in a scornful tone, "it means just what I choose it to mean." "The question is", said Alice, "whether you *can* make words mean so many things." Doubtless health was one of the words which Humpty Dumpty had in mind in this looking-glass conversation. As used by medical men and hygienists in general, health has meant the absence of disease; but according to present usage its meaning embraces the entire human condition—the moral, economic and mental as well as the physical well-being of human beings. It is in this sense that one would wish to use the word in this lecture. Unfortunately I am not fitted to act as a sort of medical Balzac, to write or speak of *la condition humaine de l'Australie*; I would prefer rather to confine my perspective to a presentation of the facts as we know them about our mortality and morbidity and to speculation on the changes in professional and community attitudes which may be required if the current patterns of ill health are to be avoided or prevented, and on the kind of modification and reorganization of institutions which might seem to be desirable in the face of new medical and social problems. One is moved to enter this controversial field of speculation because it is becoming apparent that the main barrier to progress in this area is not lack of scientific knowledge of the nature of disease or even want of understanding of human motivation and behaviour—the advances in the biological and social sciences in the past two decades have been truly astonishing—but rather individual and group prejudice and the inflexibility of monolithic organizations and institutions.

Mortality Experience.

Mortality rate is one rather crude yardstick by which the health of a community may be measured. Death statistics have always fascinated the layman; in the seventeenth century the weekly bills for mortality in London parishes were watched with interest by the wel-to-do, to whom a sudden rise in the death rate served as a signal to leave town for more salubrious and less plague-infested resorts. Self-interest is not perhaps expressed quite so crudely today, although preoccupation with death must be fairly prevalent if

[1] Read at the First National Conference on Social Welfare, Melbourne, May 26, 1960.

the popularity of articles in glossy magazines on cancer of the lung and high blood pressure is a measure of what the middle-aged middle classes are thinking about. For what they are worth as indices of health, Australian mortality rates should provide some reassurance, for they bear very favourable comparison with rates recorded in other advanced countries. The crude death rate is low — 8·5 per 1000 — and the infantile mortality rate — 22 per 1000 live births — is bettered only by the almost aseptic Scandinavian countries (for example, 17·4 per 1000 in Sweden). The maternal mortality rate is likewise most commendably low (0·4 per 1000). Translated into life tables, these rates offer males a life expectancy at birth of 67 years and females one of 73 years, an advance on conditions at the turn of the century of 16 years in the case of males and 18 years in females. To complete the brushwork on this roseate picture, the country has what one might call "optimistic" reproductive habits. Australian women marry young and have a net reproductive rate of 1·5. The natural increase in population is currently about 13%, a figure which may be compared (with political and socio-economic implications in mind) with Britain's 3% natural increase, Singapore Island's 39%, and the ominous question mark of Indonesia and other land-hungry countries. The implications of these demographic trends need hardly be discussed in detail at this time and place. At one end of the scale, the bulge of youth puts the greatest strain on the educational resources of the country, and at the other end, advanced age taxes the economy of the community in respect of pensions and costly medical services. In the middle range, modern emancipated woman presents something of a problem; having married young and terminating her active reproductive life often in the middle twenties, she is left with 50 years of life to look forward to in a society which does not appear to welcome her warmly into the professions, offices or industry.

Several factors have contributed to the good fortune of the country. It is, of course, favoured economically and in its climate. It escaped the more frightful ravages of the early phases of the industrial revolution, and was in consequence visited to a less extent than Britain or the United States by the plague of tuberculosis. The union of an enlightened social policy and a relatively stable and fruitful economy ensured the absence of extreme poverty, to which is statistically linked mortality at all ages. In more recent times progressive, zealous and efficient statutory departments of health have been instrumental in maintaining a high level of hard immunity against the more lethal and disabling infectious diseases, such as diphtheria and poliomyelitis. Antibiotics, even more recently, have most dramatically reduced mortality from enteritis and respiratory infection in childhood, puerperal infection in the child-bearing age and pneumonia and peritonitis in middle life. At all ages the surgeons have now been given free reign to perfect their ingenious talents. It is impossible to give exact statistical weight to the importance of each of these favourable factors, but sight must not be lost of the fact that life expectancy in the early 1930's had risen to a figure (63 years for males, 67 years for females) not substantially lower than present-day experience. Improvement in living conditions — that is to say, better housing, better nutrition, better sanitation, better education, cleaner personal habits—has been the predominant influence in reducing mortality from infectious disease and advancing life expectancy. These improvements were not gained without political struggle and upheaval, and you might say that the portraits of those dull utilitarians, old Bentham and Mill, who with their disciples reshaped the minds and social attitudes of our Victorian forebears and fashioned the instrument of modern government, should be hung alongside Koch or Ehrlich in ministries of health and institutes of preventive medicine. Doubtless future advances in preventive medicine will be founded in political action.

Now, although it is true that in general infectious disease has largely disappeared from the scene as a statistically significant cause of mortality, there are still a few blots to be seen on an otherwise clean sheet. Australian infantile mortality is still 20% higher than in Scandinavian countries, indicating that the present rate is by no means the lowest attainable. Most deaths in the first year of life are attributable to prematurity or to the effects of developmental abnormalities; but there are still recorded each year by the Registrar-General about 600 deaths from infantile diarrhœa and pneumonia. These deaths should dispel administrative complacency, for a majority of them are preventible. The children of problem families reared in substandard home conditions, children living in remote country districts and, in my own State, the unoffending children of full-blooded or hybrid aboriginal families, are particularly at risk. Furthermore, the price of freedom from infection is eternal vigilance. Small epidemics of diphtheria, happily of a clinically mild form, have marred the country's otherwise excellent record. A local epidemic of diphtheria can occur only when a substantial proportion of a population of juveniles is non-immune, and the obvious implication is that in many districts the immunization programme has broken down. This, in the twentieth century, is of course unforgivable. So, also, is the occurrence of death from tetanus, which is entirely preventible by active immunization. The British are wiser in these matters than we are, in placing full responsibility for maintaining immunity against infectious disease on the statutory preventive health services. If responsibility is placed on the parents, then they forget to remind the doctor, or the doctor forgets to remind the parents. In either event, the child suffers.

Sixty years ago, the ranking order of causes of death was pneumonia and bronchitis, strokes and tuberculosis. Now people die in increasing numbers from the new diseases of civilization. The great majority of us gathered here this morning are likely to die between the ages of 50 and 75 years from coronary or hypertensive disease, cancer, a stroke, bronchitis or pneumonia, from injury on the Queen's highway, or by our own hand — in this order of likelihood. In most respects we may look to our future with more composure than a similar American or British cohort. If the figures are to be believed, then Australian men have a slightly less chance of dying of coronary heart disease (mortality rate, 297 per 100,000) than Americans (347), and when we do contract the disease we die on the average about a decade later. Because the air we breathe is purer, we are less likely than Englishmen to die of chronic bronchitis and pneumonia and lung cancer (bronchitis — Australia 48, United Kingdom 140 per 100,000; lung cancer — Australia 24, United Kingdom 73 per 100,000). Only in respect of road accidents is it more lethal to live in Australia; this country has the unenviable distinction of having the highest death rate on the roads in the world — 37·5 per 100,000 — beating the United States by a few fractured skulls. In the first 20 years of life, more people die as a result of accidents than from all other diseases put together, and of these accidents more than half occur on our roads. This should thoroughly discomfit us. At least twice as many people die in Australia from alcoholic cirrhosis of the liver as in Great Britain. We are more fortunate than the Americans, among whom cirrhosis has become the fourth-ranking cause of death in middle and late middle life. There are, incidentally, some advantages and disadvantages to be gained by residing in one or other of the Australian States. In Queensland and Tasmania one is less likely, by a small factor, to die from ischæmic heart disease, and by a larger factor, from the complications of duodenal ulcer. Comparatively fewer Victorians commit suicide than Western Australians, the standardized mortality rates being 70 and 120 respectively. Perhaps the social factors of isolation and loneliness are quantitatively significant in this instance. Road users in Western Australia would seem to be more manslaughterous; the ratio of standardized mor-

tality from road accidents in Western Australia, New South Wales and Victoria is 115:95:90.

Mortality statistics are the signposts which point to trends of morbidity and to the existence of palpable social evils like industrial smog and cigarette smoking, but they have obvious limitations as indices of health. By rendering much of acute and chronic disease non-fatal, medical science could conceivably be increasing the total volume of morbidity in communities. Regrettably, there is a remarkable paucity of information in Australia on the nature and distribution in the age groups and social classes of day-to-day illness. I say regrettably, because it would seem desirable that detailed statistical information on morbidity should be a prerequisite to planning the development and extension of health and hospital services. Failure to follow what one would have thought to be an elementary rule of public-health administration has already led to some ludicrous — and expensive — errors, like building new hospitals for tuberculosis at a time when tuberculosis morbidity is manifestly declining.

Hospital Morbidity.

The institution in which I work is the only large acute general hospital in the State, and of its 550 beds between a third and a half are occupied by medical patients. I suppose that more than half of the patients in the metropolitan area requiring admission to hospital with "medical" complaints would be admitted to this hospital. I have recently analysed our experience, which I am confident is truly representative, 1400 patients having been admitted to our wards on 2000 occasions in the past three years. Nearly one-fifth of the patients came into the hospital to die from causes mentioned earlier — from strokes, heart disease and non-surgical forms of cancer and leukæmia. Almost half of our patients were aged over 60 years, and half were suffering from the cardiac or cerebro-vascular complications of degenerative vascular disease or from chronic respiratory insufficiency. When we came to add up the figures, we were a little surprised to find that at least 10% of our patients were suffering from overt psychiatric conditions. These were people who had tried to commit suicide, who drank to such excess as gravely to compromise their physical and mental efficiency, or whose somatic symptoms were severe enough to warrant full-scale investigation. We have, I am sure, underestimated the incidence of psychiatric illness in this hospital population; if the psychodynamic factors which underlie asthma and many stomach and bowel complaints are taken into consideration, then the true figure would be of the order of 20% to 30%. Moreover, it has become clear that modern hospitals are no longer "acute general" hospitals. In fact, about one-fifth of our patients remained in hospital for periods in excess of four weeks, and a similar proportion are being constantly readmitted with acute exacerbations of chronic disorders. One-fifth of admissions were judged to be for social reasons; that is to say, patients not necessarily requiring specialized care and treatment were referred because of the difficulty in providing adequate care in the home setting — if you can call a room in a substandard house a home. At least one-quarter of our patients were not medically insured. Pensioners and migrants were forgivably ignorant of changing insurance provisions and requirements; the unemployed — and let us not forget that one of the commonest causes of unemployment is chronic ill-health — have difficulty enough in feeding and clothing themselves; and the psychopathic are, of course, incapable of planning their lives on a rational basis. The patients with chronic degenerative disorders were discharged to the inadequate domestic settings from whence they came, and one-quarter of the non-pensioner population were, because of their disabilities, unable to find suitable employment. In short, the greater proportion of the morbidity that is dealt with in hospital medical wards occurs among the elderly and the socially incompetent or handicapped, and is due to what is loosely called degenerative disease or to mental ill health.

Morbidity in the Community.

In the absence of Australian data on the incidence of morbidity in the community, one must turn to the experience of other advanced countries and presume that the findings can be extrapolated to an antipodean ecology. Such surveys of the work of general medical practice have their obvious limitations. The diagnosis of minor human ills presents notable difficulties; and, of course, such clinical surveys fail to take into account the enormous volume of ill health which is statistically recorded elsewhere as industrial absenteeism, vagrancy, delinquency or interest in lunatic-fringe "isms", or which may not be recorded at all — for even in this present medicine-conscious culture people do not run to the doctor for every minor symptom. On the contrary, they buy aspirin and bromvaletone pills over the chemist's counter, and it may be of some significance in this present context that Australia has the dubious distinction of rivalling the United States in its per-capita consumption of non-scheduled proprietary analgesic and so-called calming drugs. From the British Registrar-General's survey of illness in general practice, there emerges a perspective of a disproportionate amount of physical illness in the aged, among whom the consultation rate is three or four times as high as in young adults, and of a disproportionate amount of all forms of morbidity among the residents of the poorer residential areas of congested cities. Many years ago, you will recall, Shaw and his colleagues in Chicago showed that a great deal of the suicide, alcoholism, crime and psychopathy of cities was concentrated in the inner, older, tawdry industrial dormitories. With regard to diagnosis, one-quarter of illness was recorded as being due to acute and chronic respiratory tract infection. In contrast to hospital experience, cancer and heart disease accounted for less than 5% of consultations. More important were minor accidents, obstetrical attendances, dyspeptic upsets, skin diseases, each of which accounted for about 7% of all consultations. Mental disease was said to comprise 6·5% of all diagnoses. Presumably mental disease referred to the more florid manifestations of neurosis and psychosis, and I would guess that the figure is undoubtedly far too low, for at the root of many of the vague rheumatic aches, the flatulent discomforts, the asthmatic wheezes, the migrainous headaches, the unsightly eczemas and the undiagnosed abdominal pains of youth and middle age lurk psychodynamic disturbances for which medicine has failed to find an appropriate hole which can be punched on a Hollerith card. In truth a more accurate figure for the proportion of illness due to "mental" causes would be 40% to 50%, the precise numeral being dependent on the interest, experience and insight of the observer. It has been shown, it is relevant to note, that physicians are six times more likely than surgeons to recognize the importance of emotional factors in the causation of a psychosomatic illness.

To these categories of clinically definable ill health must be added other aspects of disability which are not ordinarily regarded as coming within the purview of medical practitioners; for it would be in keeping with our definition of health that we should regard ill health as a continuous spectrum, with at one end diseases like appendicitis and at the other end such genetically and socially induced poverty of intellect or "socializability" as to render a person incompetent to fend for himself or his family in the circumstances of modern society. By arithmetical calculation, relating the number of convictions and crimes known to the police to the number of adolescent girls and boys at risk, it is estimated that in some of our suburbs between one in five and one in ten youths are behaving in a flagrantly delinquent manner. The reason for this disturbing aspect of social pathology, it must be confessed, is not at all apparent. The same may be said of alcoholism, the true incidence of which is extraordinarily hard to estimate, partly because there is no general agreement on definition, and partly because the afflic-

tion comes under statistical review only when the stage of clinical and social complications has been reached. However, on adding together statistics of admissions to receiving homes, where alcoholism accounts for up to 30%, admissions to general hospitals (about 10%), mortality from cirrhosis, charges for drunkenness and vagrancy, death on the roads (50% of those killed are under the influence of alcohol at the time of the accident) and consumption *per capita* of ales, wines and spirits, it is apparent that morbidity from this cause is very considerable indeed.

The Distribution of Ill Health.

For the purposes of control and prevention, it is important to know something of the distribution of morbidity in the socio-economic classes. There is little Australian information on this point. It is to be presumed that our experience of mortality is similar to that of Great Britain, where the professional classes are more than twice as prone as the labouring class to succumb to coronary heart disease, and where, on the contrary, the latter class have a higher mortality from bronchitis and pneumonia, accidents and suicide. It is a presumption which ought, I think, to be put to the test. There are good grounds for belief that, as in English and American cities, the severity of complications from respiratory tract infections in childhood are significantly greater among the poor and socially incompetent. The soil is perhaps more fertile, and incompetent parents are more neglectful of childish complaints. It would be found, one suspects, that morbidity rates from abortion and its complications are immeasurably higher in less economically privileged groups of our community for want of a sufficient number of family planning clinics. The epidemiological study of psychiatric illness is still in its infancy — in fact, in Australia you may say that the infant has not even been conceived, let alone born. Such data as are forthcoming from such widely separated centres as London, Boston, Bristol and New Haven indicate that the morbidity rate from schizophrenia and neurosis in general is three or four times higher in the lower socio-economic classes than in the professional classes. The American psychiatric profession would seem, then, to be inappropriately deployed, for fully three-fourths of their number would be engaged in practice among the upper crust.

New Problems of Prevention.

To sum up this saga of modern illness, infection has been robbed of its sting; because we live longer we are more likely to succumb to cancer; because of a liking for rapid transport, homicide on the roads is a socially permitted activity; because of factors unknown, but certainly related to the urban ecology, we are immeasurably more prone to develop hypertensive and coronary heart disease. In the interval between the cradle and the grave, we seem to be more susceptible to psychoneurotic disorder than our grandparents: I would say seem, because it may be the case that all that has changed is the sensibility towards neurotic disease, or that the neurosis of an individual can be less easily disguised in modern societies. Furthermore, a more disturbing feature of the unfolding pattern is the strong hint of an increase in the volume and gravity of antisocial behaviour, and in alcoholism, evidence of a widespread distaste for conditions as they exist or desire to evade modern social responsibilities. Now the success which attended the efforts of sanitarians and social reformers to clean up the murky epidemiological horrors of the past naturally encourages modern communities to think that effective action may be taken against these new epidemic problems. Such communities should not be too sanguine, for the problems are not as simple as they seem. Abolishing malaria sets off population explosions; a problem more fundamental than the control of parasites is the control of the population of their hosts. In our own over-developed societies, the virtual abolition of poverty has not unfortunately initiated the Utopia dreamt of by William Morris; wealth and leisure have engendered clinical and social evils more elusive than those of the nineteenth century.

How, indeed, are lung cancer, juvenile delinquency, coronary heart disease and alcoholism, to name but a few current preoccupations, to be prevented? There is some justification, I think you will agree, for grouping together these disparate disorders, for on reflection they would seem to us to be all causally related to the mode of life enforced upon modern urban dwellers, as well as to the hedonistic scale of values thrust upon the willing or unwilling consumers of modern admass. It is a significant commentary on the difficulties of preventing modern diseases that, notwithstanding all the publicity given to the facts relating smoking to lung cancer, the per-capita consumption of tobacco — and the death rate — continue to rise. Why do people continue to subscribe to a habit with full knowledge of the risk involved? It may be suspected that the habit is attractive to adolescents as a symbol of adult sophistication and maturity, or of defiance of adult discipline, that in adults the gestures and motions of smoking have a tranquillizing effect on states of tension, anxiety and concentration, that socially the sharing of tobacco is one of those ceremonies which seem to be required to break down reserve among a group of strangers, or that it is habit which people with a great deal of leisure readily acquire, like claret-drinking among gentlemen and tea-drinking among ladies. At all events, to stamp out the lethal habit more will be needed than pious admonishments. Governments and communities will have to deal more sternly with the interests of the manufacturing firms and their advertising agents. If we really want to stamp out smoking, the tobacco plant will have to become as much an anathema as the poppy.

A similar *volte-face* in community attitudes and habits will be needed if the incidence of ischæmic heart disease is to be significantly reduced. While the pundits continue to argue about the precise quantitative significance of several mooted ætiological factors, three of these are of unquestioned importance — namely, inherited predisposition, about which an individual can do little, overeating and sedentariness. It is difficult to imagine a coming generation of executives cycling to their city offices from Heidelberg or Glen Iris, yet there is little doubt that they would be well advised to do so. To eschew good food and tasteful cooking will prove in the event more difficult than denying oneself the pleasures of indolence, for is not food a symbol of success, contentment, prestige, security? Are not people judged by the table they keep, the cakes their wives make, and the restaurants they frequent? Are our eating habits not influenced by a barrage of advertisements appealing to a most elementary instinctual drive? And have we not inherited an archetypal myth that children will suffer from malnutrition unless they are stuffed with milk, butter and eggs from an early age, the very foods most likely to produce the lesions of atheroma?

We may well come to blame Henry Ford, not to praise him. The pall of smog which hangs over conurbations contributes its full measure of illness and death from bronchitis and lung cancer, and on the congested roads the healthy and young, as well as the old and frail, are felled like soldiers on a battlefield. Space is one commodity not on short commons in Australia, yet already a majority of the population are huddling together in poorly-planned, increasingly smoggy and congested metropolitan areas. An interplanetary visitor would, I feel sure, comment unfavourably on the poverty of ideas on town planning and road engineering and design, and on the apparently conscienceless attitude of societies towards massacre on the roads — on the way, that is to say, the temperamentally unsuited are permitted to drive and the intoxicated to escape detection and punishment.

The causes of mental ill health, too, are to be sought for in the social condition of modern communities. That it would appear that neurosis, delinquency and alcoholism

are becoming more prevalent would seem to indicate that the stresses under which people break down are of a new order qualitatively perhaps as well as quantitatively. It seems to be an article of faith among many psychiatrists to believe that all behaviour problems are to be explained on the basis of aberrant experiences in early life. By many this is considered to be a naïve over-simplification of a new epidemiological problem, as narrow in its meaning as saying that the tubercle bacillus causes tuberculosis. Of course this germ causes that disease; but of 100 exposed to the bacillus, only those few who have an inherited predisposition or whose resistance is lowered by attendant malnourishment or coincidental disease will succumb to overt infection. The modern social stresses are both novel and formidable, and the recent literature on brainwashing and sensory deprival is probably not without relevance to their understanding. The repetitive and uninteresting tasks which many persons are called upon to perform in industry, together with the canned amusements of leisure, constitute a deprival of stimulus of some degree; and in the conflict and anxiety which attend acceptance of the values of a new group or subgroup — be they of a new country, a professional organization or a trade union — are to be detected perhaps many of the symptoms characteristic of the brainwashing syndrome. Furthermore, as the complexity of the hierarchical structure of large-scale organizations increases, so also do the occasions when individual ambition and aggression are frustrated, with, in the predisposed, dire consequences. Looking at human evolution in the long perspective, it is apparent that never before have men belonged so little to their societies or had such a large vacuum of time to fill in; and surely never before were interpersonal relations so taxing, exhausting or tension-provoking. By the time most of us have disputed with our superiors, our inferiors, tax collectors, bank-managers, our wives and children, we are rendered not a little paranoid, frequently anxious and not rarely depressed. These states have indeed become almost the norms of mood and outlook.

The roots of morbidity lie so deep in the soil of human ecology that it is difficult to escape the pessimistic conclusion that if the present patterns of mental and physical morbidity are to be successfully prevented, attitudes and institutions will need to be very radically altered. Put simply, we cannot have the cake and eat it; we cannot all have cars, large incomes and abundant leisure without suffering the morbid consequences. A social philosophy of technological epicureanism must be tempered by a form of social stoicism, which is a way of saying that values not easily reducible to measurable proportions by the biological and social sciences are of importance in contributing towards the health of a community.

The Evolution of Social Services.

In the meantime an outstanding problem facing this present generation is that of relating most fitly to changing human needs, the economic, human and technical resources provided by socio-medical services. Some of these services have become cumbersome and unnecessarily costly, others of growing importance are conspicuously starved of resources. Most of us would agree, for instance, that it is no longer appropriate that almost as much should be spent on tuberculosis services as on mental health. Put in another way, the problem is one of foreshortening the cultural lag, of adapting expeditiously the old professions and institutions, which came into existence in response to social and intellectual concepts prevailing in past eras, to the novel circumstances of the twentieth century. Or, the problem may be looked at from the economic point of view. About 15% of the national product is spent on medical services alone; we should like to believe that the money is well spent.

A wide variety of services in the community are ostensibly engaged in combating ill health and promoting health. It is desirable, therefore, that there should be general agreement on what constitutes ill health. We would be interpreting modern sensibility on this matter correctly, I believe, if we were to regard ill health as a spectrum in which the wavelengths of social disability merge imperceptibly with those of overt clinical morbidity. Throughout the spectrum the elements of causation — constitutional inadequacy, social maladjustment and exposure to noxious influences — are mixed. Looked on in this light, such disparate disabilities as recidivism in the psychopathic, suicidal acts and gestures, duodenal ulcer and lung cancer are points on a continuous scale. With this global problem of ill health brought into better focus, it may then be considered that the way in which clinical and social problems have been tackled in the past, in piecemeal fashion, has lacked logic, and that in the pattern of services which have evolved there are to be seen some glaring inconsistencies, both in the manner in which ill health is handled in the community, and in the way in which dependants of the disabled are recompensed. The tuberculous are treated with sympathy and generosity, while the alcoholic is treated with contempt and neglect. The limbless are encouraged to seek rehabilitation, while the epileptic are left to fend as best they can. The wives and children of ex-servicemen fare better in economic adversity caused by ill health than civilian families. And so on — the inconsistencies, which become more hurtful to unoffending dependants as the purchasing power of the pound diminishes, can be multiplied. It would seem as if some of the medico-social services were based on moral evaluations of the individual's worth rather than on the objective needs of individuals and their dependants; but it has yet to be shown that the children of the widowed civilian or the unemployable rheumatoid arthritic or the schizophrenic require less to eat or fewer clothes to wear than the children of tuberculous parents. Moreover, despite some advances made since the publication of the Stoller report, the standard of care of patients with most forms of mental disease compares unfavourably with that of patients with physical diseases admitted to other specialist, private, or general hospitals; and the patient living in remote country areas in Australia is at a considerable disadvantage in regard to availability of consulting and specialist diagnostic services compared with his city brother. In my own State there are no diagnostic or therapeutic psychiatric services outside the city limits; there is only one child psychiatrist for a population of 700,000; there are only two diagnostic laboratories outside the city, in widely separated distant country centres; there are no trained social workers attached to the Department of Child Welfare. Further, you will recall that admission to hospital was not infrequently for social reasons, because domiciliary services were inadequate, or because suitable accommodation for chronic illness was not available. With the help of more district nurses, health visitors, domiciliary social workers and local suburban physiotherapeutic clinics, very many patients could perhaps be spared admission to acute general hospitals. There is a serious imbalance, that is to say, between domiciliary and hospital services.

Behind the facade of free drugs and social and health insurance, the situation is in fact rather chaotic. Responsibility for the prevention and treatment of disease is spread over a multiplicity of Federal and State branches of the executive. Universities, together with professional organizations and pressure groups, add their voices to the babble. Departments of child welfare and education and local government may reasonably claim that they also should be permitted to swell the chorus, for does not health education in its broad sense begin with the young? And according to our classification, is not juvenile delinquency as much a problem of ill health as, say, psychogenic asthma? When anarchy threatens, it is worthwhile to reexamine social and political objectives. In the current climate

of western opinion, it is regarded as a function of government firstly to ensure that adequate preventive, diagnostic and therapeutic facilities should be available to all people, irrespective of where they live, of their socio-economic circumstances or of the nature of their disability; secondly, that the disabled, from whatever cause, should be given the opportunity of rehabilitating themselves; and thirdly, that the dependants of the disabled (and I use this term once more in the broadest sense) should be protected against the consequences of economic want. I think we should find that if the implications of this declaration of rights were to be fully examined, a revolution not dissimilar to that brought into being by Sir William Beveridge in Britain would be precipitated in Australia. Equalization of allowances to dependants for various forms of disability would imply rationalization of the social services. Integration and coordination of the clinical and hospital services of the community would necessitate the merger of some existing instrumentalities, such as mental health and public health departments, and even repatriation and civilian hospital services, and also the creation of new administrative machinery. I have not the time or the skill to elaborate this theme; but I confess that I nurture in my mind a probably unrealizable vision of a day when health ministers will be advised by statutory panels or permanent health commissions, comprising leaders not only of the various branches of the medical profession, but also representatives of the growing profession of social science, together with economist and industrial executives, for in regard to policy-making on health matters it does seem desirable that those subscribing to the disciplines of medical science, social anthropology and economics should work together in far closer harmony than has been the case in the past. Unless by an act of statesmanship new integrative machinery is indeed created — although it is difficult to see at the moment from which direction the appropriate statesmen will appear — the progress of the idealistic war against ill health is likely to be impeded by unseemly and irrelevant internecine strife between rival professional groups and imperial statutory departments.

I should have liked to devote more time to a discussion on quality and deployment of human resources required to solve some of the novel problems of chronic disability and morbidity, physical and behavioural. That more social workers, more nurses, more probation officers, more physiotherapists are needed has been evident for years, and it is to be hoped that as awareness of and interest in broader aspects of health problems increase, more personnel will be attracted to work in these fields. One suspects that a cultural factor limits expansion of these essentially feminine professions. Australian girls tend to marry young, and after rearing a family tend not to return to their former professional fold. One wonders if in our new societies this waste of talent and professional training can be justified on economic or social grounds; after reviewing the extent and nature of our social and health problems, it would seem clear that there is considerable scope for the part-time employment in hospitals, health centres and the domiciliary field for trained ancillary workers.

The growth and expansion of mental health services go a considerable part, but not the whole, of the way towards answering the serious social and economic problems of the increasing volume of major and minor mental illness. If mental illness was to be dealt with exclusively by the expert, then we should, on the basis of current morbidity statistics, be encouraging about one-third of all medical graduates to become professional psychiatrists. That the discipline of psychological medicine has been most shamefully neglected by governments and universities in Australia is indeed only the painful truth; but the mere training of more specialist psychiatrists proffers, of course, no permanent solution to the broad problem. Most psychosomatic illness, very many of the minor neurotic depressions and anxieties of adult life and old age, and certainly the behaviour problems of childhood are most fittingly managed in the domestic setting by the general practitioners, or as Dr. Fox of *The Lancet* proposes to call him, the "personal doctor". If, however, general practice is to make a more substantial contribution to preventive and curative psychological medicine, a rather fundamental change in sensibility, attitudes and the use of time may have to take place. With regard to time, both custom and economics dictate that a practitioner should deal with so many, often as many as 30, "items" a day. Now it may take five minutes to diagnose bronchitis and prescribe medicine, but it is likely to take an hour to interrogate an incipient schizophrenic or to come to grips with the underlying emotional problems in a patient with spastic colitis. Perhaps modern communities need many more doctors prepared to spend as much time on fewer patients. And with regard to sensibility, a major criticism that has been levelled against the medical curriculum is that it leans too heavily in the side of physical and biological determinism; the mind is trained to think exclusively in physiological, biochemical and pathological terms, so that a young and inexperienced graduate feels at a loss if he cannot, as Balint has put it, give his patient a recognizable physical disease, and so that a paradoxical situation is developing in which a substantial proportion of the profession is blind to the existence of a substantial proportion of morbidity. In this the young graduate is cast in the same mould as his master, who affects to damn the social and psychological sciences with the very faintest of praise. One has reason to believe that attitudes will not be changed overnight or even in a decade by adding slabs of teaching in psychiatry to the middle or end of the overloaded course. The process of indoctrination should perhaps begin earlier in the curriculum, otherwise psychiatry is likely to be viewed with suspicion, levity or frank hostility by the student in whose temporal lobes the circuits subserving memory of the names of the essential aminoacids and the relations of the left adrenal gland are reverberating. It is not too much to hope, one would have thought, that knowledge on how the human mind develops and functions, why people behave as they do, and how societies are organized should be imparted at the same time as the pearls of preclinical wisdom are cast before the hungry swine. Furthermore, attitudes acquired in a learning situation are conditioned to a considerable extent by the *milieu*, and it might seem appropriate that the study of physical disease in highly specialized hospitals should be balanced by practical experience of the ecology of men and women in the home, the factory and the community.

Conclusion.

Each individual views health in a perspective based on his own professional interest and experience; this is one of the urgent problems — that professions, governments and society as a whole should be looking at human needs in the broadest terms. It is clear, I think, that beyond the immediate need for knowledge on the causation of physical disease and disturbed behaviour, other problems urgently require solution in our advanced highly urbanized communities. There is lack of clear thought, for instance, about values in medical research and social welfare: some areas of investigation enjoy high esteem, others are unfashionable; some social problems excite public sympathy and interest; others are wholly neglected. Institutions fossilize; how to retain their flexibility in modern democracies is a political problem of some considerable importance. And, finally, the growth of professionalism, advantageous in so many ways, poses the problem of how to integrate the several professional or social services in respect of the needs of individuals and their families. Perhaps Mannheim is right — if our modern democracies with their swollen populations are to function satisfactorily, then the integrating driving force in education will need to be encouragement of the sensibility of social awareness.

GERIATRICS IN THE HOME[1]

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GERIATRICS in the home is a very wide subject; but it is thought that some comment upon the simpler aspects may be of interest.

Owing to modern therapeutics, the span of life is much longer, so we shall have more and more people in the age group of 65 years and over. The first and most important factor to realize (especially for the younger folk) is that people rarely feel old, and that they find it difficult to understand why the younger members of the family worry about them.

A variety of factors, such as past illness, type of work done, worries and responsibilities, etc., and also the physical and mental make-up of the person to start with, all aid in producing the wide mental and physical variation of the person in any given age group.

In the English journal *Physiotherapy* of May, 1959, an article entitled "Medical and Vocational Co-operation of the Aging", by Rudd and Feingold, gives some interesting figures for America. They start at the age of 45 years, pointing out the difficulty that people over that age have in getting new jobs if they lose their old ones. In America, from 1900 to 1950, the general population had increased by 98%, but the number of people aged 65 years and over had increased by 297%.

There is a great difference in the efficiency of people of any given age, but people are retaining mental and physical strength much later in life in modern times. It is possible that before very long consideration will have to be given to raising the retiring age. At least some compromise could surely be accepted, so that the experience of these people will not be lost to industry. For instance, a good bank manager with much mental and physical vigour (which many of them have when compulsorily retired) would surely be of great value to many firms. For those not so vigorous, perhaps a reduced wage would be acceptable to the authorities to compensate the employer for the slower *tempo* of work. This would greatly help the families, many of whom have quite a struggle financially. In private enterprise many executives carry on well into the seventies. Many old people who have retired take up voluntary work to keep themselves occupied. So tonight I speak of people who are old not so much by age as by disability.

There is a growing army of "sixty-fivers", compulsorily retired, who are physically and mentally fit for work and are looking for it. Bank managers and office workers and many physical workers are among these. Having been in practice for many years, and looking at these people who have been patients for years, I feel rather proud of having kept them so fit. Then we look at the other side of the picture — the arteriosclerotics, those with coronary sclerosis, strokes and so on — and I feel that I have failed these people. Did I let Bill Smith up too soon after his pneumonia 15 years ago and start his congestive failure? Was I not insistent enough with Mrs. X. and her weight problem? And so on. Sometimes you will find a real lesson in the old, broken-down patient, to apply to the new, much younger one.

We all know the neurotic with a bagful of troubles; we hate to see him in the waiting room. Make a physical examination from time to time; these people do get real things wrong with them, and it is humiliating to find that they have gone to someone else, and that the mild rectal bleeding they have been complaining of for years suddenly turns out to be a carcinoma of the rectum, or the functional dyspepsia after years changes to a carcinoma of the stomach.

[1]Read at a meeting of the Queensland Branch of the British Medical Association on April 7, 1960, at Rockhampton.

What is the aging process? Why do people grow old?

This is not an easy problem. E. C. Dodds (1953) gives some information on this subject:

> Studies of the vertebrates show that in those cases where violent death is avoided senescence with its systemic classical features intervenes, in a manner very similar to that occurring in the human subject.

Tissue removed from vertebrates can be cultured by the methods of tissue culture almost indefinitely without senescence occurring; so it is not an intrinsic attribute of the cell. Ever since the ductless glands were discovered, some method of restoration of lost youth has been sought — for example, rejuvenation by monkey glands, etc.

The pituitary has been a favourite to be blamed for senescence, Simmond's disease being the common illustration. Simmond's disease is associated with injury to or disease of the anterior pituitary lobe. This disease in the female is associated with senescence; the face becomes lined, the hair falls out, the menstrual periods cease and the picture of age appears. In the male the testes atrophy, with loss of potency. Some operations on the pituitary are followed by Simmond's syndrome. However, experimental hypophysectomy does not produce aging, but only the secondary sex changes one would expect from the loss of the gonadotrophic hormones.

In bilateral cystic ovarian disease, bilateral oophorectomy in the adolescent is followed by eunuchoidism, but in the older woman a condition similar to the menopause is produced, but certainly not senescence. In the east, bilateral orchidectomy has been a common method of producing eunuchs, but premature aging does not occur. Further investigation into possible renal or digestive causes has given entirely negative results. Generally as age advances the basal metabolic rate declines, as does the functional efficiency of the various organs.

Investigations are still going on, but at present we have no real knowledge of what initiates and what carries on the aging process. Later investigations suggest that the adrenals may have some influence. I would think that the influence of the endocrine balance is involved, especially the relationship of pituitary and adrenal, and that the stress and strain of life, such as illness, mental stress, etc., influence the time of onset of senescence and the speed of its development. This, of course, is only a guess; but Simmond's disease is due to a lesion of the anterior pituitary lobe and not to its complete destruction.

Diet.

Diet is one of the most important factors in age. A wife will usually see that her man is properly fed, if they can afford it. When the man dies, the wife will often accept tea and bread and butter as a meal, to save trouble.

One patient illustrates a variation of this factor. He was a very active man with a lot of drive, and he was reasonably wealthy. He had a stroke, which left him with two changes. Mentally he lost his drive and lost all interest in life and actually developed some delusions. Electroconvulsive therapy corrected his delusions, but he still lacked interest in anything. The second effect was reduction in the speed and the power of deglutition. His table was excellent and his wife was a very good cook, but in spite of this he developed beriberi.

Careful questioning elicited the fact that before his stroke he had been the fastest eater in the family, but owing to his deglutition difficulties he became the slowest eater, and, being sensitive, he used to watch the other members of the family, and when they finished the meal, he finished. Adequate vitamin therapy produced a marked improvement in his physical condition.

The point, of course, is that, no matter how good the food and how well presented, if the patient does not eat enough of it, deficiency will develop.

Roughness and dryness of the skin with a rash and œdema, especially on the ankles and legs, are valuable leads; occasionally the legs are moist.

A capsule of balanced vitamins given once a day has advantages. The patient rises in the morning and does his morning chores (bathes, shaves, dresses, takes his capsule), whereas if capsules are taken after lunch and dinner, they are easily forgotten.

As a student in Melbourne, I was very impressed when a patient was admitted to the Melbourne Hospital suffering from scurvy. He lived in the heart of Melbourne. I have always tried to avoid vitamin deficiency in older people, as it is so common, but I did get caught with the beriberi, mainly as I knew the standard of living and did not think of the real reason for the deficiency.

Circulation.

Some years ago, a book was published called "Learn to Live with Your Illness". The author's name is unfortunately forgotten, but the title alone conveys a great deal.

Transient giddiness is a very common symptom of age. A young person can leap to his feet from a lying position and run away, while an older person may fall down. A short, simple explanation of the effect of a sluggish vasomotor system upon an older person during a sudden change of position is helpful. An old person on rising should sit on the edge of the bed with the feet on the floor for a minute or two, stand up and hold the head of the bed for a minute or two, then move off quietly in the desired direction.

Old people should have a low bed, so that when they sit on the side of the bed, their feet will be touching the floor. Thus they can get into and out of bed easily, especially at night.

A divan bed is far too low. Like a too low chair, it is comfortable to use, but the effort of getting into and especially out of it is far too great.

It is important that old people should train themselves to avoid sudden movements. Women should be warned against hanging out clothes with the hands above the head and looking upwards.

Giddiness is due to a number of causes. The simple vasomotor instability is a common one, and in any case of giddiness Parkinson's disease should be remembered.

Cardiac conditions can, of course, contribute to giddiness. Irregularities can cause it, and during congestive failure it is often a symptom.

Patients can take digitalis for long periods.

I can recall two patients with auricular fibrillation who were under digitalis, one for 30 years and the other for more than 20 years. The first, a man, died at the age of 85 years, having survived a prostatectomy at 83 years. The second, a woman, is alive and well at 69 years, and running quite a big, active business.

Patients with congestive failure are more difficult. It is hard to get them to rest, and I find that some of them are inclined to regard the itching of the legs from œdema as being due to the "Chlotride", and to avoid taking the tablets. The cooperation of the younger members of the family helps a lot — first in getting the tablets taken, and secondly with a particularly difficult problem in some cases — the salt-free diet.

The treatment of giddiness is difficult. It is well known that sudden marked reduction of blood pressure in the aged can be disastrous, and that the stronger hypotensive drugs should be avoided. Recently I had one patient who collapsed on the floor after one "Peritrate" tablet.

Small doses of digitalis and a mild sedative are often enough, if the above-mentioned causes are explained. That brings us to the old argument which was raging when I was a student: "Do small doses of digitalis do any good, or is full digitalization essential?" I believe that small doses of digitalis with light sedation do help old people with a lot of extrasystoles, as they do worry about their hearts.

Coronary disease appears to be occurring in much younger people these days, but one does find some of these people with what appears to be pain of cardiac origin. The old triad of gall-stones, dyspepsia and coronary pain has to be separated. This can be quite expensive, but at least a cardiograph can be taken. I find lawn-mowing gives these people pain even with a motor mower, and a question to a man who mows his own lawn will often give a lead to the solution of the problem. I find "Cardilate" very useful in these cases. It seems to be more gentle and its effect longer lasting than the trinitrins.

Some years ago Dr. Ellis Murphy pointed out to me that people who have had coronary occlusions or are having coronary pain can do, without pain, things which they have been accustomed to do for years, when other less energetic but unaccustomed actions will bring on the pain.

Strokes.

Giddiness may, of course, be a preliminary symptom, but it varies in intensity. Arteriosclerotics get changes in the cerebral circulation, and they are very difficult to treat. I often wonder (the thought is not original) if these changes are not due to a series of small cerebral hæmorrhages, which causes a steady mental and physical deterioration.

These people become childlike and inclined to wander; they talk to themselves, and are difficult to handle. Each case must be treated on its merits. Mostly these patients are not bad enough to be restrained.

The patient with the full hemiplegic stroke, of course, usually goes to hospital. If he survives, he is sent home in a varied state of recovery. Treatment should be persisted in for two reasons: first, the patient still feels that something is being done for him, and so he still has some hope. Secondly, you will occasionally have success. Physiotherapy if they can afford it, active movement and massage of the limbs help maintain muscle tone, circulation and joint improvement, and, most important, they keep the skin in good order.

Some physiotherapeutic tricks are worth trying. A patient who cannot move a limb may do so if it is suspended in a sling in an appropriate way. Lying on a board lubricated with powder will at times allow movement, and suspending the patient in water helps movement.

I remember one old man who had suffered a bad stroke. This was in the days when physiotherapy was still massage. I asked him to have his family massage the body and limbs using olive oil as an antifriction measure. A few weeks later I went to see him; he extolled the virtues of olive oil, and announced how much he had absorbed, obviously fixing his mind on the olive oil as a curative agent, if absorbed through the skin. A "clever Alec" remark rose to my lips, but by the grace of God I choked it back and gave him encouragement. In eight months he was out of bed, and soon he was walking with a stick. The next year he was elected to the Harbour Board and served usefully on that Board for five years, loudly extolling the virtues of olive oil.

These people are very heavy to lift. A machine, a hydraulic lift, is available. It costs about £45, and it will lift a heavy person with ease. He can be wheeled from the bedroom to the veranda and then lowered gently into a chair.

There are other gadgets for people who cannot get about — an electrically operated chair which climbs stairs, a seat which can be attached to a staircase (press a button and up they go) or a full lift. All of these are expensive.

The hydraulic lift is ideal for hospital or home; it is very easy to work.

Sleep.

Many older people go to bed early and find the night very long. Urinary frequency, often due to some prolapse or stress incontinence in women and prostatic disorders in men, gets them up every hour or so, and they miss their proper rest.

This is a difficult problem. The men can have the prostate operated on if it is bad enough; the women are mostly too old for surgery. Urinary antiseptics do not seem to help much. These patients are often troublesome if admitted to hospital, in that they wander about at night. This is due to the fact that they wake up at night, find themselves in unfamiliar surroundings and wander round looking for their own bed.

In men who wander a lot it is wise to check them for retention of urine, as this is a potent cause of an old man wandering about looking for a lavatory. The fact that a nurse reports that he has passed quite a quantity of urine is not enough — he may have retention with overflow.

Another factor to remember is that a patient developing sudden frequency of micturition and strangury may have sugar in the urine. The irritation of the sugar can produce a "flaring" bladder with a heavy load of pus cells in the urine.

Insomnia is a difficult problem if urinary frequency is at all severe, and heavy sedation may be followed by a wet bed. Fluid restriction in the evening is a very real help, careful consideration of the toilet facilities is important, and a commode can be invaluable in unsewered areas. The choice of a sedative is wide, in these days of tranquillizers and the thousand-and-one types of barbiturates. I try to keep the sedatives simple and not too strong. In many cases the fact of taking a simple pill is a big help. When a patient goes to bed early, is up a few times during the night and is a little restless between times he has the impression of not sleeping at all, although in fact he has had quite a bit of sleep. I usually use a phenobarbital or pentobarbital type of sedative.

One factor worth noting is that when an old person takes a pill, he may forget that he has taken it and take another, and so on. If you find an old person suddenly becoming rather wandery mentally, think of this; I have seen it happen several times.

Arthritis.

Joint and muscular pain with some deformity and stiffness is present in some degree in nearly all old people. They are subject to remissions the same as younger people. During exacerbations, if treatment is necessary, aspirin is probably the best drug, or aspirin with codein or "Nembudeine" for the more refractory patient.

Infra-red lamps, while not able to do much really, are a visible form of treatment. The warmth is a comfort at times, and it gives the patient something to do, if he can afford a lamp.

Apart from the aspirin group, I have had fairly good results with "Butazolidin". I use it only in small doses.

My experience with cortisone has been disastrous.

One patient was on a small dose of prednisolone for 11 months; she still had quite considerable pain, but on the whole had quite a deal of relief. After 11 months she developed pain in the left tibia; she could still walk on it, but X-ray examination showed a spontaneous transverse fracture almost through the tibia. This was put in plaster. An X-ray film of the spine showed marked osteoporosis, but no collapse of any of the vertebral bodies. Three weeks later the patient had pain in the back, and X-ray examination showed collapse of the bodies of three vertebræ. In spite of high calcium and œstrogen therapy, during the next few months she was very ill; she had cardiac failure with pulmonary œdema. She recovered from that, and finally developed thrombocytopenic purpura with a fatal cerebral hæmorrhage. The prednisolone was stopped when she developed the fracture eight months before she died.

Some of the old ladies living alone in their own small houses keep them very well, they have highly polished linoleum with slippery mats, and the hall runner (her pride and joy for 40 years), a little stringy at the edges; these strings are a death trap for toe, walking stick or crutch. These can cause nasty accidents to those unsteady on their feet, especially if they use a stick or a crutch, and in most cases the vision is not good.

Most people with arthritis have a habit of turning taps by pressing the palm of the hand on the tap and turning it. After a time this usually results in the red or green warning sign coming out and being lost.

Many ingenious devices have been used to help arthritics in their housework, such as slings to put the arm through. These allow the lifting of a fairly heavy object — for example, a pot from the stove; if the sling is well placed, the object can be taken to a table. Careful thought will help to solve each problem.

On going up stairs, these arthritics get great assistance from the stair railing to hold on to; the supports of the railing are a great help—if they are vertical, they can grasp and pull on them. If the railing goes past the top step, it is easy to use; but some modern ones stop short of the top step, and the patient has much trouble in negotiating the top step.

It is sound practice to have a strong handle in the shower room to give people something to hold on to in the shower, or a handle to pull on to help them out of the bath.

In two-storied houses, some thought should be given to having the patient live on the ground floor.

Sight.

Old people vary widely in the degree of their vision. After a cataract operation they lose a lot of lateral vision; as one doctor put it, he cannot back a car as he used to. This may be important if traffic has to be negotiated.

A wireless can be a great asset to an old person who has failing vision, as he cannot read.

A cataract operation may help. Old people stand up to a cataract operation very well, and they should not be condemned to blindness without careful thought. Patients with moderately severe congestive cardiac failure can survive the operation, and often the general condition improves with the added pleasure from the restoration of vision. Perhaps the will to live is stimulated.

Even bed-ridden patients should be operated on, as they get great pleasure from seeing what is going on around them.

Hearing.

A wireless is of no use, of course, if the hearing also has failed. It is sometimes difficult to get old people to persist with a hearing aid for what seem to others ridiculous reasons.

One woman had been very deaf for years; she had tried and discarded hearing aids years before. She was induced to try a modern one, but there was great difficulty in persuading her to persevere with it. She could hear very well, but she objected very strongly to the background noises — dogs barking, motor-car horns, trucks passing and aeroplanes overhead (she lived near an aerodrome), etc. She had been living in a silent world of her own and liked it. After a few weeks it all settled down to normality and for two or three years now she has been very happy with her hearing aid.

Skin.

In a northern area, the skin should be checked from time to time. Keratosis, basal cell carcinoma and squamous-cell carcinoma are common. The visiting radium clinic will handle these lesions unless they are suitable for excision.

Skin rashes especially of the beriberi type suggest deficiency.

These old people often bruise very easily and have subcutaneous hæmorrhages after very minor injury, and it is wise to be gentle when grasping an arm to help them.

Of course, we shall always have the varicose ulcer in a proportion of these people, and for the very old some form of supporting bandage is the only answer. These patients spend most of their later life in a bandage; carefully put on and adjusted, this can be a great comfort to them. Deformed toe nails, callouses and corns are often troublesome, and a good chiropodist is a great help. The feet can be trimmed, and with comfortable shoes these people can manage fairly well — but again, be wary of the unsuspected diabetic.

Bowel.

Many old people suffer from constipation, although cases of impacted fæces do not seem to be as frequent as they used to be. Paraffin, red-label "Petrolagar", "Agarol", colloxyl with danthron, etc., are all useful. Many people take the old-fashioned "Alophen" pill, and many other well-known pills; these seem to work well enough. The new "Durolax" suppositories are useful.

Occasionally people with degenerative mental changes seem to lose their social senses, to the extent that when the bowel wants to move or the bladder empty itself, they just do so wherever they happen to be. It is not incontinence, but a loss of the social sense of the fitness of things. This is difficult to deal with. For the bowel, some form of napkin is not very satisfactory, but is worth a trial. A daily enema in the morning also is worth a trial, as this will empty the bowel and engender habit, like that developed by a colostomy patient. The urine can be caught in a portable urinal. These take some handling, especially in the female. The real trouble is that these patients are mentally defective and will not leave an apparatus in position. These cases usually end with the unpleasant old-fashioned duty of cleaning up. The attempt to establish habit and times for bowel and bladder function is the most likely method to produce results.

Mental Changes.

A number of these people show mental changes, which vary widely. They often have a good memory for past events and a poor one for recent events. Most of them are a little slow to understand, but a little patience is well rewarded. From this slowness to understand the changes go right through to those of full cerebral softening.

These are almost certainly due to changes in the cerebral circulation and are difficult to treat, and treatment in these cases is usually disappointing. In some cases chlorpromazine or promazine is worth trying; but the patient must be watched carefully in the early stages of treatment, as these drugs sometimes have side effects which make the patient worse.

Falls.

Old people do not stand severe falls very well. Apart from fractured neck of the femur and other injuries of that type, they often have chest pain and cardiac signs with very little to show for it. Lung injury may lead to pneumonia. In my early days pneumonia was the commonest cause of death of elderly patients, but with modern antibiotics they often recover. After a severe fall, watch these people carefully, as at times they will deteriorate and just die.

Transport.

In the cities most old people travel by tram or bus; having done this for many years, they manage. Any difficulties in seeing the destination and getting on and off vehicles are usually overcome with the help of fellow travellers. This help is readily given.

"Should Grandpa drive a car?" With reasonable vision, he can drive. One ophthalmologist told me of a taxi driver in London who managed with a visual acuity of 6/36 in each eye. The real trouble is, of course, reaction time — how long he takes to react to what he sees. A man who has been driving a car for 40 years will usually react almost automatically to most stiuations; but the time he takes to react is the vital factor. Over the years the reaction time grows slower and slower without this fact being realized. Some of these people drive an old car and stick to the middle of the road, driving slowly, leaving a trail of potential accidents or bad temper and frustration behind them.

A patient of mine had an accident one night; he is aged 82 years. I was rather staggered when the policeman investigating the case said: "He is a good, safe driver, he never gets out of second gear."

So the answer to it is, judge each case on its merits — reasonable sight and hearing, but above all, a quick reaction time and a reasonable capacity for quick thinking.

Other Factors.

As you all know, it is vitally important for women in the forties and fifties to have the breasts examined from time to time, also the uterus and cervix, in the search for possible undetected malignant disease. To prevent misunderstanding, it is as well to explain the reason for this, and it is also wise to teach these patients the art of examination of their own breasts, and to warn them of the importance of a blood-stained discharge or an unpleasant discharge.

These things do occur in the aged. When I was a student at the Melbourne Hospital they showed us a woman, aged over 70 years, with a scirrhous carcinoma of the breast. She had had this condition for 19 years, and she looked as if she could go another 19 years as far as the breast was concerned.

Another old woman, aged over 70 years, one of our patients two or three years ago, had a slight, blood-stained discharge. Examination disclosed a frozen pelvis from a carcinoma of the cervix.

In these old people it is as well to be guarded in the prognosis in malignant disease, as some of these tumours advance very slowly.

An occasional rectal examination in men will disclose malignant disease of the prostate. Dr. Douglas Hicks, the pathologist at the Royal Melbourne Hospital, gave a lecture at the Urological Society meeting some years ago. He had taken one section of every prostate from subjects coming to autopsy. Between the ages of 70 and 80 years, nearly 50% showed malignant change, and from 80 to 90 years the figure was over 50%.

Such things as hernia and hydrocele can be very trying and uncomfortable. Tapping will relieve the hydrocele, but the hernia is a different matter. It is a good plan to advise operation on hernias before the patient grows too old. With modern anæsthesia and techniques, operation can be done successfully much later in life. However, these hernias can become very much bigger very rapidly, and then it becomes difficult to get a good result. Other complications — cardiac, arteriosclerotic, etc. — often render surgery unwise or impossible.

Peter Ryan (1960) concludes his remarks as follows:

> The well-known indifference to the suffering of older people often led to delay in their presentation, while their doctors often hesitated to advise operation, forgetting that at no age was delay in emergency surgery more lethal.

On the other hand, diagnosis of abdominal emergencies is not always easy; the pain threshold is often high and the description of symptoms vague.

General Remarks.

Should these aged or infirm people live alone? This was discussed with Dr. Marjorie Warren, who expressed the opinion that even with the risk of injury they are better doing so if they wish, as it helps the feeling of independence. This is, of course, true, and Dr. Warren is a world authority on this subject.

Two exceptions that prove the rule will be quoted — which makes one think of treating some of these cases on their merits.

A woman, aged 74 years, had a beautifully kept house with well-polished linoleum. She slipped on the floor and sustained bilateral Colles' fractures. She lay for several hours before being rescued, and died of a sudden heart attack a few days later.

Another very difficult old woman had a hall carpet old and frayed at the edges; she caught her toe in it, and fractured the neck of her femur. This was successfully pinned, but she would not discard her crutch. She fractured a humerus, then some ribs and then a wrist, and as a finale fell head first into the refrigerator, with disastrous results.

In conclusion, it is suggested that these people should have a general examination from time to time. They do get other diseases, such as new growths, but a blood count will often reveal anæmia. It is thought that all the older ones should be taking vitamins.

We must all grow old, and it is important to make old people feel that they are not a nuisance and that they are wanted. An old man came in to see me only the other day. I knew him well. He said, "I'm frightened, doctor, very frightened." Further inquiry showed that he was afraid he would soon become a nuisance to his family. We all feel like that at times.

Some care, thoughtfulness, and at times a good deal of sacrifice, can make the evening of life a lot more attractive.

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MONGOLISM—THE MODERN MANAGEMENT.[1]

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"MENTAL deficiency today is tied to outdated procedures whose aim has been to segregate the defective from the community, rather than to integrate him with it." The medical profession has, on the whole, supported the policy of segregation, and even today it is in this country a common practice to forbid the mother of a new-born mongoloid baby to take it home with her.

A prohibition is a form of treatment which, like all forms of treatment, has sometimes to be modified as new knowledge becomes available. "No exercise for heart patients", "no pregnancy for the tuberculous", are examples of former prohibitions which doctors no longer impose on their patients. "No mongol for the mother" is another prohibition which I propose in this paper to examine, and perhaps modify.

This custom of advising the parents of a new-born mongoloid child to put their child away from them is, of course, based on excellent intentions. The chief of these is the desire to restore as quickly as possible a normal family situation, by removing immediately the abnormal member. This is something of a surgical approach to the problem. The separation is made immediate, so that the mother "does not become fond of the child", which would make difficult a later separation. In its most extreme form the advice is given "to forget the baby", and even to tell the world that the baby has died, though in fact it has gone to an institution. The mother is often told that she will neglect her other children if she keeps the mongoloid baby at home, and that they will suffer severely from the ridicule of others and various social handicaps.

The ill effects of this policy of routine certification to an institution are several. When the baby does not come from a home handicapped by poverty or other severe social disability, it is always harmful to the baby to put it into an institution. Physically the child suffers ill health from being put into an overcrowded institution, such as the Children's Cottages. At Kew, this overcrowding of children has been a great social evil for a number of years, and in spite of new buildings and wards the problem is always with us. Until last year, when the institution was made a separate hospital, we had no control over which or how many children were admitted. Even now we have only a partial degree of control, so that we now have 732 children in the institution, of whom approximately 150 are mongoloid. In spite of the best endeavours of staff, occupational therapists and others to overcome institutional harm, it is clear that the baby's emotional and intellectual life will also suffer by separation from home.

The policy of segregating mongoloid children, I think, underestimates the force of mother-love, and the advice to "forget your baby" is unreal and harsh. We sometimes see at Kew mothers with severe guilt reactions following certification of the baby; in one or two cases this has been relieved by the parents' taking the baby home.

Another disadvantage of the present system of certifying babies is the falseness of the medical statement that has to be made on the legal document MH.1: "I certify that [this baby] is insane." Clearly, such a statement is untrue, especially in the case of neonates who sometimes come to us only a few hours old. Any method of arranging human relationships on the basis of false statements is clearly unsound.

Another serious effect of the policy of segregating mongoloids has been that of "obscuring the prognosis". That is, the full potentialities of these children were till recently not realized, and professional groups, especially doctors, have had to revise their thinking about the trainability of mongoloids.

One cannot discuss this newer knowledge without referring to the history of the day centres, which have played quite a part in developing this knowledge. These centres were initiated by the activity and energy of parents who were dissatisfied with the lot of their mentally retarded children. Prior to 1950, these children had either to stay at home in idleness or go to a State institution. The first centres in Australia were established shortly after the war, and the movement quickly spread, so that in Victoria there are now 27 day centres, which provide for 900 mentally retarded children who live at home.

The Oakleigh Centre which was built in 1953, was the first occupational centre constructed. It is a modern institution in Warrigal Road, which is attended by 151 patients, of whom 54 are mongoloids. These are brought each morning to the centre, often from long distances, by private or Red Cross transport. The age range of these subjects is from three to 36 years, the youngest group being the kindergarten group. Above these are four groups of children who are given training in various manual activities—cleaning shoes, washing dishes and various other tasks.

Above these again are a craft group, who are taught a wide range of handwork, and an industrial or workshop group, who are also given occupational training. It is indeed illuminating to visit the workshop at Oakleigh, and to see mongoloids doing these skilled tasks (Figures I to IV). Though it may take a long time to teach the particular task—whether it is drilling valve bases for television sets or assembling refrigerator trays or hinges—once it is learned, the repetitive task continues with reasonable skill. The industrial tasks give great satisfaction to the worker and earn money, most of which at present is paid into the centre's funds. The obvious happiness and eagerness of the children attending such a centre, and their good behaviour, are quite inspiring, and provide an ideal far removed from the old conditions of pram-beds and overcrowding at Kew, which I have briefly described. It is an ideal, of course, of which we are very conscious at Kew. For the past four years we have had an active occupational therapy department,

[1] Read at a meeting of the Pædiatric Society of Victoria on August 12, 1959.

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which, when fully developed, will in future provide what is really needed for the occupational training of our children.

What of the impact on the family and parents of the mongoloid child? This has often been assumed to be universally unfavourable, an assumption which is generally based on personal impressions of a few cases, and which is used as a basis for advising parents. On collecting data on a larger scale, however, it seems that the picture is perhaps a little better. Thus a survey made in England (Evans and Carter, 1954), showed the following results in 81 mongoloids attending day centres:

Age range: 8 to 13 years. Assessment on family situation:

Entirely satisfactory	58
No complaint	7
Major practical problems	2
Minor practical problems	3
Major psychological problems	4
Minor psychological problems	7
Total	81

A similar inquiry has been made amongst the parents of mongoloid children attending the Oakleigh Centre. Through the kindness of the staff, a *questionnaire* was

FIGURE I.
Mongoloid children, aged nine to 10 years, at Oakleigh Retarded Children's Centre, showing various manual skills.

sent to these parents, and a follow-up visit to the home was made by our social worker at Kew, Mrs. I. Higgins. We sought the parents' view on the following questions: (i) Does the presence of the retarded child in the family diminish the parents' care of the other children? (ii) Is there embarrassment to these children? (iii) Does the presence of the child help in building and strengthening of character? (iv) What effect has there been on the parents' physical and mental health? (v) What effect has there been on the relations between husband and wife? Between the parents, and friends and relatives outside the family? And between the parents and their other children?

The replies were assessed partly on the parents' answers, partly on the social worker's assessment, and partly on my personal knowledge. Such information, of course, is fairly subjective and cannot be considered very accurate; nevertheless, we have little better to guide us than what the parents have to say on these problems.

From a total of 42 families reasonably complete information was thus obtained. In three of these cases certification of the mongoloid baby had been recommended in the neonatal period, and refused; in 17 other cases no such recommendation had been made; and in the remainder (22), the parents were unaware for some months of the diagnosis.

These families contained 153 children, an average of 3·6 children per family, which is a little higher than the present Victorian average of 2·7. Eighteen of the families were large (four or more children); this would be due to the maternal-age effect in mongolism bringing larger families into the survey.

Of 36 mothers who commented, 23 were of the opinion that there had been no diminution in the care of the other children. Of 34 mothers who commented, 21 stated

FIGURE II.
Mongoloid girls, aged 15 and 16 years, weaving.

that these other children had suffered some embarrassment before other children as a result of their mongoloid sibling. However, in 12 of these cases, the embarrassment was said to be "slight" or "occasional", so that in the majority (25) of these 34 families, embarrassment caused to the other children was no grave problem.

FIGURE III.
Mongoloid boys, aged 21 and 22 years, assembling refrigerator trays (Oakleigh Workshop).

On the other hand, a good effect on these children was frequently commented on (by 25 mothers out of 34 who could give an opinion), in that their character training was aided, the children becoming kinder to and more tolerant of others as a result of their close contact with the mongoloid brother or sister.

Any effect on the parents' physical health is obviously impossible to assess fully. However, 24 mothers considered that there had been no ill effects, and only two thought that there had been any severe ill effects.

Ill effects on mental health are even more difficult to estimate properly. In 17 cases the parents were thought to be quite stable, and in a further 15 cases there was evidence of mild emotional disturbance. In 10 cases there was obviously severe disturbance, including two cases of psychiatric breakdown in the mother. However, in seven of these 10 cases, there were stresses present in the family other than the presence of the mongoloid child—difficulties with husbands, hostility of relatives, unhappy childhood of a parent, alcoholism, financial difficulties and other familiar problems.

It is thus not possible to ascribe any marked degree of mental stress to the retention in the home of a retarded child, though it is obvious that some stress usually exists, particularly in the smaller families. The parents were fairly unanimous in commenting on the aid and support given by the day centres, especially to the mothers. Most

FIGURE IV.
Mongoloid boy, aged 19 years, drilling television valve bases (Oakleigh Workshop).

of them also expressed anxiety about the future of the children, when the parents were no longer able to care for them. The day centre movement is conscious of this problem, and is planning the creation of residential hostels to cover this need.

No serious ill effects on husband-wife relationships were commented on; eight parents considered that they had been "drawn closer together".

In 26 families, the parents appeared to enjoy a fairly normal social life outside the home; in 12 cases there was some limitation of this, and in four cases this limitation was severe. The provision of some housekeeper or baby-minding service to help these rather gallant parents is a need that was obvious to the social worker.

No serious ill effects were revealed about the relations between the parents and their other children.

All the homes (42) possessed a television set— a 100% concentration, well above the average of 60% in the metropolis of Melbourne. Television children's programmes are very appropriate to the mental age of many retarded children, who are very fond of them, as we have also observed at the Kew cottages. It seems likely that television will play an important part in the management of retarded children, as these parents have already discovered for themselves. This phenomenon deserves further study.

This pilot study shows that while there are disadvantages and resultant stresses in keeping a retarded child at home, these are not nearly so great as has been usually assumed. With the aid of outside agencies such as the day centres, these difficulties are by no means insuperable. They are, perhaps, today no greater than those caused by children with other varieties of handicap, such as cerebral palsy.

Indeed, I would propose that the management of all handicapped children be based on the same principles, irrespective of the type of handicap—firstly, home care, whenever possible, supported by the help of outside organizations. When home care is not possible, because of either family deficiencies or the child's special needs, then institutional care should be advised.

In conclusion, I would stress that sending infant mongoloids to an institution should never be a routine procedure, but should be a decision made by the parents after careful consideration of many factors. Though it is often advisable, for example, for reasons of maternal inadequacy or ill health, any such decision is often best deferred for at least a year.

The care of mongoloid children at home has recently undergone a great change, owing to the growth of a more tolerant community attitude and to the activities of the many day centres, which provide splendid facilities for the part-time care and training of these children. Many of these have been and can be successfully reared at home. When guiding parents of infant mongoloids, it has been my practice to take or send them to such a day centre, where they can for themselves gain some insight into their child's future. Similarly a visit to the Children's Cottages can be arranged. When thus presented fully with all the facts of the situation, most parents can usually take a wise decision for themselves, provided that they are given time and not rushed into early decisions.

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PENICILLINASE IN PENICILLIN REACTIONS.

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THE incidence of reactions following the administration of penicillin varies from 1% to 5% approximately (Sherwood *et alii*, 1957; Welch, 1957; Rosenthal, 1958). The majority are delayed reactions associated with urticaria. Acute anaphylactic reactions are less frequent, and fatal cases are uncommon. In a survey carried out in Australia by the Australian College of General Practitioners, New South Wales Faculty, it was found that the incidence of reactions among 6832 patients given penicillin was only 1·3%, and that there were no fatalities. However, one fatal reaction has been reported in Australia (Roxburgh, 1959).

Types of Penicillin Reactions.

A wide variety of signs and symptoms accompanies the allergic reactions which may follow the administration of penicillin. In general, these reactions may be divided into two main groups—(i) immediate, of the anaphylactic type, and (ii) delayed, of a serum-sickness type. However, there is no clear distinction between the groups, and a certain amount of overlap may occur. With immediate reactions, a variety of symptoms such as weakness, palpitations, vertigo, tightness in the chest, nausea, vomiting, convulsions and urticaria may precede the onset of the vasomotor collapse that is characteristic of the attack. Dyspnœa and laboured respiration followed by cyanosis and unconsciousness may occur, and the ensuing symptoms may be fatal. Urticarial reactions are the most common of the delayed manifestations, but they may be associated with many other symptoms, such as fever, arthralgia and a variety of skin conditions, such as erythema, purpura, bullæ and exfoliation. These symptoms usually subside rapidly after the withdrawal of penicillin, but in a small proportion of cases they may persist for twelve months or longer.

The immediate reactions of an anaphylactic type are considered to be the result of previous sensitization to penicillin administered parenterally, orally or topically. In many of those cases in which a definite history of previous administration is unavailable, sensitization is considered to occur as a result of previous unknown contact with foodstuffs and ointments containing penicillin, or of penicillin-producing fungal infections. The interval between the last known contact with penicillin and the dose which provokes the attack may vary from ten days to many years. A personal or family history of other allergic conditions is frequently present.

With respect to the delayed reactions, it is considered that previous sensitization with penicillin is not necessary for symptoms to occur, although patients often give a history of previous uneventful administration. A personal or family history of allergy is also common in this group.

The number of reactions is usually proportional to the frequency with which a particular type of penicillin preparation is used. In the Australian survey mentioned earlier, the greatest number of reactions occurred with procaine penicillin; yet the over-all incidence of reactions with procaine penicillin did not appear to be any greater than with crystalline penicillin.

In this survey the incidence of reactions with oral penicillin preparations was found to be low in comparison with procaine or crystalline penicillin, while the incidence of reactions with parenteral benzathine penicillin was high. Similar findings have been reported by others (McFarland, 1958; Bernstein and Houser, 1959).

For immediate reactions the treatment should not differ from the management of anaphylaxis due to any other causative agent. The prompt administration of adrenaline or similar compounds is essential, and, if possible, a tourniquet should be applied above the site of the injection. Antihistamines and corticosteroids are useful adjuncts to treatment.

For delayed reactions, rest in bed, together with the oral or parenteral use of antihistamines or corticosteroids, is the main method of treatment, and adrenaline or similar compounds may be used in severe cases. However, the majority of these reactions fortunately subside rapidly on discontinuance of the penicillin therapy.

Clinical Trial with Penicillinase.

The fact that penicillinase can convert penicillin *in vitro* into non-antigenic penicilloic acid suggests that it may be of considerable value in the management of penicillin reactions. The efficacy of penicillinase in the treatment of penicillin reactions in humans has been referred to by others (Becker, 1956; Minno and Davis, 1957; Zimmerman, 1957; Friedlaender, 1959).

A clinical trial using the enzyme penicillinase obtained from the growth of *Bacillus subtilis* (Mathews and Semple, 1960) was carried out. The penicillinase used in this trial was supplied as a powder and was freshly reconstituted in 1 or 2 ml. of normal saline or distilled water.

Between March, 1959, and March, 1960, penicillinase was administered by intramuscular injection to 40 patients in doses ranging from 350,000 to 800,000 units. All of them had been suffering from an irritating skin condition, believed to be caused by penicillin. The chronicity of the skin condition varied greatly—from one day to two years. An urticarial eruption was the predominant feature in 31 cases. A maculo-papular rash featured in three cases, a bullous eruption featured in three other cases, and in two the rash was not described. In addition there was one case of contact dermatitis.

The ages of the patients varied between 12 and 82 years, and their average age was 40 years. Only four of them were aged under 25 years.

Three of the cases which were at first thought to have been caused by penicillin-sensitization were later rediagnosed, with the result that penicillin was discounted as an ætiological factor. These were finally diagnosed as seborrhœic dermatitis, erythema multiforme bullosum (Stevens-Johnson syndrome) and dermatitis herpetiformis, respectively, but have been included in this series. All these patients failed to show any response to penicillinase.

In 33 of the 40 patients treated the reactions occurred after parenteral administration of penicillin, in two after combined parenteral and oral administration, in two after oral administration, and in three after direct contact with penicillin.

The time interval between the last known contact with penicillin and the injection of penicillinase varied greatly. The average interval was 65 days. In 17 of the cases it was two weeks or less, but in half the cases it was longer than four weeks. In ten (one-quarter) of the cases, more than two months had elapsed since the last known contact with penicillin.

After treatment with penicillinase, 20 (that is, half) of the patients were improved, but the remainder showed no response. Improvement was assessed in terms of definite symptomatic improvement within three days with accompanying subsidence of the skin eruption.

In two patients who had suffered from urticaria for five and eight months, respectively, the skin condition improved greatly after administration of penicillinase. On the other hand, in another case an injection of penicillinase given only 25 hours after the last injection of a six-day intramuscular course of penicillin, and only 18 hours after the onset of urticaria, failed to evoke any clinical improvement.

Nine of the patients were given penicillinase within two days of their last known contact with penicillin. Seven of this group were greatly improved, but two did not show any response. Eleven of the 14 patients who received their injection of penicillinase in the first week after the termination of penicillin therapy were improved. Of the 22 who were given penicillinase after more than two weeks had elapsed since their last penicillin contact, only eight were improved.

Thirty-one of the 40 patients received a single injection of penicillinase, seven received two injections, and two received three. In five of those who received two injections, the relief that followed was much greater after the second injection, but in two neither the first nor the second injection gave any relief at all. One of the patients who was given three penicillinase injections improved greatly after the first two; but a third injection given ten days after the first provoked an acute exacerbation of his urticaria. It was thought that this reaction might have been the result of sensitization to the penicillinase.

The second patient given three penicillinase injections was a man, aged 35 years, who developed an erythemato-vesicular or "id-like" reaction affecting the hands, feet and scrotum four days after a course of procaine penicillin injections followed by phenoxymethylpenicillin given orally. Within three days all irritation and inflammation had disappeared. He was then given a second injection of penicillinase in order to prevent an early return of symptoms. He remained well for the next eight days, but after this period an acute exacerbation of his rash occurred. He again responded to an injection of penicillinase, and after two months' observation has not had any further recurrence of the rash.

Two patients treated with an early batch of penicillinase developed pyrexial reactions. Later batches have been purified by a process of adsorption, with the result that no further pyrexial reactions have been encountered. Local pain and tenderness were reported in six cases, but in the remainder there was no greater discomfort than after any other intramuscular injection.

Reports of Cases.

CASE XIII.—An Army officer, aged 48 years, suffering from a generalized urticaria of two days' duration, was referred for treatment on July 10, 1959. During the previous 10 days he had received 13 million units of procaine penicillin for folliculitis of the scalp, the last injection having been given two days previously. The patient had for a number of years suffered many attacks of urticaria of unknown ætiology. There was no other history of

allergy, and he had not to his knowledge had penicillin before the present course. The rash was widespread and exceedingly irritable. It was most pronounced at the sites of the previous penicillin inoculations — namely, over the deltoid and gluteal regions. A dose of 560,000 units of penicillinase was administered intragluteally. Thirty minutes later the patient stated that the irritation had gone. It was observed at the same time that the urticarial weals over most of the body had vanished, except in one deltoid region. Up to the present there has been no recurrence of urticaria, and the patient has remained well.

CASE XIV.—A married woman, aged 40 years, had been given two intramuscular injections of penicillin on consecutive days for an eye infection. Seven days later there developed on her legs an irritable rash, which rapidly spread all over her body, and which, when she was examined four weeks later, was inflamed and eczematous. Two years previously she had developed "tender lumps" after a penicillin injection. In addition, she gave a history of sensitivity to hair dye and had suffered from hay fever, but had not had an attack for 18 years. Within 24 hours of the administration of 750,000 units of penicillinase, the skin condition had improved considerably. Five days later all inflammation and exudation had subsided, and the patient was then free of irritation. An antihistamine elixir was prescribed. One week later she reported that very irritable patches had appeared on her legs and shoulders. As these skin manifestations were unlike the previous ones, it was thought that she might possibly have developed a sensitivity to the antihistamine. Two days after this interview she was worse, the patches were intensely irritable, and the original rash had recurred on her forearms and legs. A second injection of penicillinase was given, and within a few hours the irritation had considerably eased. All the skin lesions subsequently settled without any further treatment and up to the present have not recurred.

CASE XXIII.—A patient who had developed generalized urticaria during a course of injections of procaine penicillin suffered an exacerbation of his urticaria after a Salk vaccine injection given a month later. He did not improve after an injection of 400,000 units of penicillinase, but the urticaria gradually subsided after a second injection of 350,000 units two days later.

CASE XXXVII.—A trainee nurse, aged 19 years, presented with troublesome penicillin contact dermatitis of some 15 months' duration. Various forms of therapy, including hyposensitizing injections, had been tried without success. Within a few hours of a penicillinase injection she reported definite alleviation of symptoms. She was immediately transferred to a section of the hospital where contact with penicillin would be minimal, and at the same time she was advised to restrict her intake of dairy products. Three months later she said that she had resumed duty in a ward where penicillin was used freely, and that, although there had been a slight recurrence of her dermatitis, she now felt confident that she would be able to complete her training.

CASE XXXVIII.—A woman, aged 38 years, developed generalized urticaria and angioneurotic œdema of the face two months after the conclusion of a course of 36 penicillin injections. These manifestations recurred for several months, despite many different forms of therapy. After five months the causative agent had not been determined, so it was decided to administer an injection of penicillinase. The swelling of the lips and periorbital tissues subsided shortly after this injection, but five hours after the penicillinase injection the generalized urticaria became so severe that she had to be admitted for two days to the convalescent hospital at which she was a wardsmaid.

Discussion.

The effectiveness of penicillinase in bringing under control the delayed type of penicillin reaction is not easy to assess in the light of this clinical trial, as it is well known that many of these reactions subside spontaneously. In several of our cases treatment with antihistamines and corticosteroids was concurrently carried out, so that it was difficult to determine in those patients who responded what part was played by the penicillinase. Nevertheless, penicillinase appeared to effect permanent improvement in a number of cases in which the skin condition had persisted for many weeks, despite various forms of therapy.

In some instances there was no certainty that penicillin was the sensitizing agent. For example, in Case XXXVIII described above, the urticarial eruption appeared two months after the last known contact with penicillin. In addition, in some cases well-recognized sensitizing substances, such as tetanus antitoxin, sulphonamides and barbiturates, had been given at the same time as the penicillin therapy.

In many of the earlier cases in this trial the skin condition was of a chronic nature, having been present for many months. This accounts for the unusually long average interval of 65 days between the giving of the penicillinase and the last contact with penicillin. To many patients the skin eruption was most irritating and distressing, and penicillinase was administered to them as a last resort. Surprisingly, in a small proportion of these more chronic cases the condition did appear to respond to the enzyme. It was noticeable, however, that the acute and the less chronic condition appeared to respond much better to penicillinase than did the more chronic type. In fact, when penicillinase was given within two weeks of the last contact with penicillin, two out of every three patients treated derived considerable benefit. If, on the other hand, more than two weeks had elapsed, only one patient in three was benefited.

Response to penicillinase was dramatic in some cases—for example, Case XIII. In others no improvement was noted for two or three days. However, in the majority of those in which improvement occurred, easing of symptoms commenced within 24 hours of the penicillinase injection.

Unfortunately the small number of patients presenting with penicillin reactions precluded the carrying out of a control series. Mathews and Semple (1960) have demonstrated the effectiveness of this type of penicillinase in destroying circulating penicillin in animals, and judging from the clinical improvement observed in some of the patients in this series, it would appear that penicillinase acts in a similar manner in humans.

Several of the patients in this series were advised to restrict their daily milk intake, because of the possibility that small quantities of penicillin might have persisted in milk samples taken from mastitis-infected cows which had been treated with penicillin. In the United States of America, Zimmerman (1959) has shown that small quantities of penicillin present in some samples of household milk were sufficient to provoke an exacerbation of symptoms in penicillin-sensitive subjects. In Australia, Richards (1958) has found concentrations of penicillin ranging from 0·05 to 2·25 I.U. per millilitre in some samples of raw milk supplied to receiving depots of the New South Wales Milk Board. The amount of penicillin required to produce a sensitivity reaction varies from person to person and from time to time; but Zimmerman believes that small amounts of penicillin contained in milk could initiate sensitization in a non-sensitive person.

No immediate reactions of the anaphylactic type were encountered. Penicillinase would appear to have no place in resuscitation in this type of case, but it may be used later if there are signs of relapse which are not controllable by adrenaline, antihistamines or corticosteroids.

Penicillinase can be produced by a number of non-pathogenic bacterial organisms found in the respiratory and gastro-intestinal tracts, and it is possible that penicillinase sensitivity may be present in a proportion of normal humans. It has been demonstrated also that the administration of penicillinase to rabbits and humans leads to the formation of antibodies. On two occasions in our series an acute exacerbation of urticaria occurred shortly after an injection of penicillinase. In the first case, this reaction occurred after a third injection of penicillinase, and in the other case (Case XXXVIII) the reaction occurred after the first injection of penicillinase. Pyrexial reactions occurred in two other cases; but since the adoption of an adsorption method of purification this type of reaction has not been encountered. Reports of reactions of the anaphylactic type following the administration of penicillinase have been published (Caputi, 1959; Reisch, 1959; Hyman, 1959). These reactions occurred in individuals who had not previously

been given penicillinase, and it was not known whether the penicillinase itself or a protein impurity in the preparation was the causative factor.

The relief of an allergic rash due to penicillin may be rapid after the administration of penicillinase, and it has been suggested that, when a rash of unknown etiology presents itself, this phenomenon may be used as a diagnostic aid. This is not recommended at the present time. Penicillinase should be used only when penicillin is considered to be the causative agent.

At present the recommended dosage for parenteral administration is approximately 800,000 Levy units, and the activity is reckoned to last from four to seven days. A similar dose may be repeated when symptoms recur after an initial favourable response. It was observed in some cases that a greater and more lasting benefit was obtained after a second injection. However, it has been demonstrated in animals that the efficacy of the second injection may be reduced by neutralizing antibodies formed as a result of the initial injection. It is, therefore, desirable to use a single dose, when possible, to obtain the maximal initial response. When symptoms recur and further doses are required, they should be given as soon as possible after the first administration. At present the initial dose should be 800,000 Levy units, but the total dose will depend on the persistence of penicillin within the body. In general, these factors may be judged from the dose and type of penicillin used.

Summary.

1. In a recent clinical trial, penicillinase prepared from *B. subtilis* was administered to 40 patients suffering from an irritating skin condition believed to be the result of sensitization to penicillin.

2. The results indicate that penicillinase has a place in the treatment of the delayed type of penicillin reaction.

3. Penicillinase caused very few side effects; but the possibility of sensitization to penicillinase should not be taken lightly.

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LABORATORY STUDIES ON THE PURIFIED PENICILLINASE OF BACILLUS SUBTILIS.

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PENICILLINASE is an enzyme produced by various species of bacteria, and it catalyses the degradation of penicillin to penicilloic acid, a product which is devoid of both antibacterial and antigenic activity. The enzyme has long been in use for destroying the antibacterial activity of samples of penicillin products taken for sterility testing. A related use is for destroying penicillin in specimens from patients undergoing therapy with penicillin, as a preliminary to the attempted cultivation of penicillin-sensitive microorganisms from the specimens.

A more recent development is the clinical use of penicillinase for the treatment of reactions to penicillin in patients who prove to be allergic to this antibiotic. Becker (1956) was the first to observe that purified penicillinase could be safely injected parenterally, and that it retained its enzyme activity against penicillin *in vivo*.

Later reports, by Friedlaender (1959) and by several other workers, have confirmed the efficacy of penicillinase in treating some, but by no means all, patients with penicillin reactions. Although serious side effects from the injection of penicillinase have been reported only on rare occasions, these have been of a dangerous anaphylactic nature (Trinca and Keen, 1960). Minor side effects, such as fever and local pain, have been of common occurrence. Many of these reactions may have been due to impurities, rather than to the enzyme itself.

All published reports on the clinical use of penicillinase known to us have referred to purified preparations of the enzyme derived from *Bacillus cereus*. The laboratory work reported here was done with purified preparations derived from *B. subtilis*, in order to establish their safety and effectiveness *in vivo* as a preliminary to the clinical trials undertaken by Trinca and Keen (1960). *B. subtilis* was favoured as the source of penicillinase, because of the stability of this form of the enzyme and the ease with which it could be extracted from culture filtrates by selectively adsorbent materials.

Experimental Investigation.

Preparation of the Enzyme.

B. subtilis strain B201 (Royce *et alii*, 1952) was grown in a peptone-meat extract medium, the cells were separated by Seitz filtration, and the enzyme in the filtrate was purified. In our earlier experiments, purification was effected by ammonium sulphate precipitation, but later the enzyme was purified by the method of Birner (1959). This involved adsorption under acid conditions on to an adsorbent material found to be especially suitable for the purpose, and subsequent elution of the purified enzyme from the adsorbent under slightly alkaline conditions.

Heated human serum albumin was added to this highly purified solution, to serve as a stabilizing agent during subsequent operations and storage. The solution was then sterilized by filtration, dispensed into vials in quantities of about 800,000 Levy units, and freeze dried. The dry preparation was dissolved in 1 ml. of injection of sodium chloride immediately before use.

TABLE I.

Pyrogenic and Shock Reactions to the Penicillinase from Bacillus Subtilis.

State of Purity or Method of Purification.	Number of Batches.	Intravenous Injections.						Intramuscular Injections.					
		Dose (Levy Units per Gramme of Body Weight).			Number of Injections.	Percentage of Shock Reactions.	Percentage of Pyrogenic Reactions.[1]	Dose (Levy Units per Gramme of Body Weight).			Number of Injections.	Percentage of Shock Reactions.	Percentage of Pyrogenic Reactions.[1]
		Lowest.	Highest.	Mean.				Lowest.	Highest.	Mean.			
Crude filtrate ..	3	60	207	138	10	0	10	—	—	—	—	—	—
	5	17	235	108	13	7	50	122	280	207	3	0	0
Ammonium sulphate precipitation.	1	6	51	24	3	0	0	—	—	—	—	—	—
	5	8	280	77	23	13	65	12	660	182	13	0	69
	1	26	360	267	6	100	—	280	280	280	1	100	—
Adsorption and elution. ..	3	7	280	118	10	0	10	202	280	241	2	0	0
	3	9	280	166	16	0	81	280	280	280	5	0	20

[1] Expressed as a percentage of the number of rabbits injected but not showing symptoms of shock.

The potency of the enzyme was assayed in terms of the Levy unit by measuring the rate of change in optical density of a mixed solution of penicillin and penicillinase, at a wavelength of 240 mμ. The Levy unit is defined as the activity of that amount of penicillinase which, in the presence of sufficient substrate to maintain a zero order reaction, will destroy 59·3 units of a pure alkali salt of benzylpenicillin per hour at 25° C., in a phosphate buffer solution at pH 7·0 (Levy, 1950).

Toxicity.

No harmful reaction was evident after the intravenous injection of purified *B. subtilis* penicillinase into mice or its intramuscular injection into guinea-pigs, at dosage rates of up to 560,000 Levy units per kilogram of body-weight. This maximum dose was injected into 7 mice and 7 guinea-pigs in the case of the enzyme purified by ammonium sulphate precipitation, and into 10 mice and 10 guinea-pigs in the case of the enzyme purified by adsorption.

Table I shows the incidence of shock-like reactions and of pyrogenic reactions after 81 intravenous and 24 intramuscular injections of penicillinase into 57 rabbits. The penicillinase was administered as a crude filtrate, or in either of the purified forms. The doses ranged from 6000 to 660,000 Levy units per kilogram of body weight.

It will be seen from Table I that no shock reactions were observed after 33 injections of preparations of penicillinase purified by adsorption. One shock reaction was observed after 26 injections of crude penicillinase, and this reaction was fatal. It followed an intravenous injection of 5·1 ml. of culture filtrate, containing 208,000 Levy units of penicillinase, into a rabbit which had previously received three injections of penicillinase. A shock reaction was observed in each of the seven rabbits into which was injected a particular batch of penicillinase purified by ammonium sulphate precipitation. One of these reactions was fatal; it followed the intravenous injection of 360,000 Levy units of penicillinase into a rabbit which had not been exposed to the enzyme previously. Three shock reactions were observed after 39 injections of six other batches of penicillinase purified by ammonium sulphate precipitation.

Table I also shows that different batches varied widely in their capacity to induce pyrogenic reactions, a rise in temperature of 1·1° C. or more within three hours of the injection being taken as the criterion of a positive response. Pyrogenic reactions were observed more frequently after intravenous injections than after intramuscular injections. They were observed more frequently after injections of the enzyme purified by ammonium sulphate precipitation than after either the crude enzyme or the form purified by adsorption.

In all rabbits examined after a course of injections of penicillinase, antibodies to the enzyme were demonstrated by either or both of two methods: (a) a precipitin reaction

TABLE II.

Concentrations of Penicillin (in Units per Millilitre) in the Serum of Two Rabbits at Intervals after the Intramuscular Injection of 30,000 Units of Sodium Benzylpenicillin.

Experimental Series.	Date.	Rabbit No. 1. Interval after Penicillin Injection (Hours).[1]					Rabbit No. 2. Interval after Penicillin Injection (Hours).[1]				
		1	2	3	4	5	1	2	3	4	5
A	3/3/59	0·55	0·16	0·03	<0·01	Nil	0·50	0·11	0·02	<0·02	Nil
	5/3/59	0·44	0·08	0·02	Nil	Nil	0·57	0·14	0·02	<0·02	<0·02
	6/3/59	0·48	0·08	0·03	0·03	<0·02	0·69	0·10	0·03	0·03	<0·02
B	16/3/59[2]	Nil	Nil	Nil	Nil	—	Nil	Nil	Nil	Nil	—
	17/3/59	0·30	0·07	0·02	Nil	—	Nil	Nil	Nil	Nil	—
	18/3/59	0·69	0·17	0·03	Trace	—	Nil	Nil	Nil	Nil	—
	19/3/59	—	—	—	—	—	0·09	Nil	Nil	Nil	—
	23/3/59	—	—	—	—	—	0·35	0·02	0·03	<0·02	—
C	6/4/59[3]	—	—	—	—	—	—	—	—	—	—
	7/4/59	0·27	0·04	0·03	Nil	—	0·33	0·03	0·01	0·02	—
	8/4/59	0·43	0·05	0·04	Trace	—	0·89	0·11	0·02	Trace	—
D	13/4/59[4]	Nil	Nil	Nil	Nil	—	0·34	0·13	0·03	Trace	—
	14/4/59	0·20	0·06	0·03	Trace	—	0·81	0·09	0·02	Trace	—
	15/4/59	0·88	0·18	0·03	Nil	—	—	—	—	—	—

[1] "—", no test done.

[2] On 16/3/59, 10,000 Levy units of penicillinase were injected intramuscularly into Rabbit No. 1, and 100,000 units into Rabbit No. 2.

[3] On 6/4/59, 31,600 units were injected into each rabbit.

[4] On 13/4/59, 100,000 units were injected into Rabbit No. 1, and 10,000 units into Rabbit No. 2.

TABLE III.
Summary of Data of Table II.

Date of Penicillinase Injection.	Rabbit No. 1.			Rabbit No. 2.		
	Dose of Penicillinase. (Levy Units.)	Period in Days during which Penicillin Blood Level was		Dose of Penicillinase. (Levy Units.)	Period in Days during which Penicillin Blood Level was	
		Completely Suppressed.	Partially Depressed.		Completely Suppressed.	Partially Depressed.
16/3/59	10,000	1	2	100,000	4	>8
6/4/59	31,600	<2	2	31,600	<2	2
13/4/59	100,000	1	2	10,000	0	1

between penicillinase and the animal's serum; (*b*) a retarding effect of the animal's serum on the rate of destruction of penicillin by penicillinase *in vitro*.

In-Vivo Activity Against Penicillin.

Two rabbits, each weighing about 2·0 kg., were injected intramuscularly in the right thigh with 30,000 units of sodium benzylpenicillin on each of three days. Blood samples were taken hourly for five hours after injection, and penicillin in the serum was determined by a plate diffusion method using *Sarcina lutea* strain S.K.F. 1360. As will be seen from Table II, Series A, the blood level curves were fairly reproducible.

Ten days later, rabbit No. 1 was injected intramuscularly in the left thigh with 10,000 Levy units of penicillinase purified by ammonium sulphate precipitation. Rabbit No. 2 was injected with 100,000 units of the same material. Immediately thereafter, and on each succeeding day for a total of three and five days, respectively, each rabbit was injected intramuscularly in the right thigh with 30,000 units of sodium benzylpenicillin. Blood samples were taken as before. It will be seen from Table II, Series B, that on the day of injection of penicillinase no penicillin could be detected in either rabbit, even as shortly as one hour after the injection. On the following day, the penicillin blood level curve in rabbit No. 1 was slightly depressed, and no penicillin could be detected in rabbit No. 2. On the second day after the injection of penicillinase, the penicillin blood level curve in rabbit No. 1 was normal, but again no penicillin could be detected in rabbit No. 2. On the third day, the blood level curve in rabbit No. 2 was still far below normal, and even after a week it was still slightly depressed.

The experiment was continued in a similar fashion some weeks later, but both rabbits were now given 31,600 units of penicillinase, and penicillin was given on the first and second days after the injection of penicillinase. Unfortunately no penicillin was given on the same day as the penicillinase, and it will be seen from Table II, Series C, that in each rabbit the penicillin blood level curve was only slightly depressed on the following day, when the first group of samples was taken.

The experiment was resumed a week later, this time with the original allocation of penicillinase doses reversed. Table II, Series D, shows that the 100,000 units dose of penicillinase (in rabbit No. 1) was now completely effective only on the day of its administration, although the penicillin blood level curve was slightly depressed on the following day. The 10,000 units dose of penicillinase gave only a slight depression of the penicillin blood level curve even on the same day.

The results of these experiments are summarized in Table III. It will be seen that the large initial dose of penicillinase had a much more persistent anti-penicillin effect *in vivo* than had the small initial dose. It is also clear that the initial dose interfered very greatly with the persistence of the effects of subsequent doses.

Discussion.

The animal experiments described here have demonstrated the effectiveness *in vivo* of purified penicillinase derived from *B. subtilis*. Preparations purified by adsorption have been shown to be less likely to cause reactions than those purified by ammonium sulphate precipitation.

The finding that, in rabbits, the duration of the penicillin-destroying effect following an injection of penicillinase was longer after the first dose than after subsequent doses in the same animal, may be explained by the formation of antibodies to penicillinase stimulated by the first injection. Support for this explanation is afforded by the demonstration *in vitro* of antibodies to the enzyme in the blood of rabbits dosed with it.

A similar build-up of antibodies in man might be expected to interfere seriously with the efficacy of prolonged treatments with penicillinase. In acute reactions, when it seems likely that demonstrable penicillin in the blood and tissues is the cause, this may be an indication for the administration of a single large dose rather than a number of smaller doses.

In cases of long-standing reactions to penicillin, however, the reasons for the frequently effective treatment with penicillinase remain obscure. It seems scarcely possible that persistent traces of penicillin in the tissues can be responsible for the continuation of these reactions. Certainly no penicillin can be detected in the blood by the usual techniques. The effectiveness of penicillinase in such cases may perhaps best be explained in terms of non-specific mechanisms (Barnard, Felton and Lupini, 1959). The formation of antibodies to penicillinase may not interfere with whatever mechanisms are involved, and so in these cases a single large dose may not necessarily have any advantage over alternative dose schedules.

Summary.

The biological properties of purified penicillinase obtained from cultures of *B. subtilis* by an adsorptive technique, were compared with those of material purified by precipitation by ammonium sulphate.

Large doses of the purified enzyme were non-toxic to guinea-pigs and mice. In rabbits, the material was antigenic and sometimes pyrogenic; some anaphylactic reactions were observed after injection of the enzyme purified by ammonium sulphate precipitation, but not after injection of the material purified by adsorption.

When a series of doses of penicillinase and penicillin was administered to rabbits, the initial dose of the enzyme destroyed penicillin more effectively than did later doses.

Acknowledgements.

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Reports of Cases.

GALL-STONE ILEUS: SPONTANEOUS PASSAGE OF THE CALCULUS.

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GALL-STONES may reach the bowel either through the common bile duct or through a fistula between the gall-bladder and the adjoining bowel, usually the duodenum. In the former instance, the stones of necessity are small, are often multiple and faceted and never cause obstruction, being passed without further incident in the fæces. This is illustrated by the case of a man, aged 33 years, who, seven years after the commencement of attacks of recurrent biliary colic, passed many small, hard, faceted green gall-stones in his fæces at irregular intervals. Six months later the attacks of pain were often accompanied by jaundice. At operation, a chronically inflamed gall-bladder, full of calculi similar to those passed in the fæces, was removed. The common duct was dilated, but contained no calculi. There was no fistula between bowel and gall-bladder.

When the gall-stone reaches the bowel through a fistula, several events may occur, depending mainly on the size of the stone. If it is small, it may be passed naturally in the fæces or even vomited. Bernhard (1934) reported 109 cases of internal biliary fistula due to gall-stones with no evidence of intestinal obstruction. However, if the calculus is large, then intestinal obstruction, often called "ileus" because of the equivocal symptoms of painless distension in a mechanical blockage, is almost certain. The calculus usually causes obstruction in the ileum (Jekler, 1959), but sometimes it does so in the jejunum or in the colon. In some instances two calculi may be present, causing simultaneous obstruction; this occurred in the case of a patient who had a small-bowel obstruction due to a calculus jammed in the terminal portion of the ileum, with a coexisting large-bowel obstruction due to another calculus jammed in the descending colon.

Once a calculus does become jammed, then it must be removed surgically, else death eventuates. One must not wait for the spontaneous evacuation of the calculus that occurred in the two cases reported here. These are stressed because of the rarity with which large biliary calculi are passed spontaneously *per vias naturales*.

Case I.

A man, aged 65 years, suffered from an attack of acute cholecystitis, which subsided with conservative treatment. Cholecystography showed that the gall-bladder not only did not function, but also contained a large transradiant calculus. The patient remained well for one year until, 24 hours prior to his admission to hospital, he commenced to suffer attacks of severe colicky periumbilical pain associated with the copious vomiting of green, bile-stained fluid, causing severe dehydration. The pain gradually moved down to the hypogastrium. The patient passed no flatus or fæces during this time.

Examination of the patient on his admission to hospital showed him to be a dehydrated man in otherwise good condition. The colicky pain had subsided, and the patient felt improved; but the abdomen was noticeably distended. Whilst preparations were being made for a rectal examination, the patient felt a sudden call to stool, and passed much flatus, a small amount of fæces and a very large round gall-stone, 1·5 inches in diameter. It was the size and shape of the gall-stone shown in the Graham's test.

The patient rapidly improved, and his convalescence was normal. A later Graham's test showed that there was still no function of the gall-bladder, which now did not contain any gall-stone.

Case II.

An obese woman, aged 73 years, with no history of symptoms pointing to gall-bladder disease prior to her present illness, was admitted to hospital in a confused, semi-stuporose state. The history showed that she had commenced to suffer attacks of colicky upper abdominal pain some 24 hours previously. These attacks were at first accompanied by nausea and then by frequent copious vomiting. The bowels were not opened, and only a little flatus was passed during this period. At the same time very little urine was passed.

On her admission, the patient was very drowsy, and seemed to suffer recurrent abdominal pain. She was severely dehydrated, with a furred, dry tongue. Her temperature was normal, her pulse rate was 120 per minute, and her respirations numbered 25 per minute; the blood pressure was 110/70 mm. of mercury. The abdomen was greatly distended. Bowel sounds were present, but not increased in amplitude. The hernial orifices were free. Rectal and pelvic examinations gave normal results. The bladder was catheterized and a few millilitres only of urine were obtained. The urine was concentrated, and contained albumin, white and red cells and granular casts. The blood urea content was 80 mg. per 100 ml. A full blood count revealed hæmoconcentration with a normal white cell count. There was a disturbance of the serum electrolytes — namely, low sodium and chloride values. A plain radiograph of the abdomen taken with the patient supine showed gross distension of the large and small bowel.

A tentative diagnosis was made of a late stage of an acute intestinal obstruction with prerenal uræmia. Gastro-duodenal suction and intravenous electrolyte and fluid therapy were instituted. The gastric aspirate was seen to be fæculent in character. Operation was considered, but was postponed on account of the patient's poor general condition and state of dehydration. This treatment was continued, with considerable improvement in the general state of the patient, until, 72 hours after her admission to hospital, the patient heaved violently in bed and passed through the anus a large gall-stone the size of a bantam's egg, followed by a large quantity of liquid fæces and flatus.

Recovery was thereafter speedy and uneventful. A late Graham's test revealed that there was no function of the gall-bladder. There were no calculi visible.

Comment.

In both these cases, later cholecystectomy has been advised to prevent the possibility of further calculus formation with its very real chance of recurrent gall-stone ileus as mentioned by Rogers and Carter (1958).

Summary.

Two cases of gall-stone ileus, which subsided spontaneously with the passage of the calculus through the anus, are presented. It is pointed out that this is an unusual and fortunate termination of this condition, though not one which should be expected.

Acknowledgement.

We wish to thank Dr. H. G. Norton, of Manly, for the opportunity of treating the patient in Case I.

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Reviews.

Neoplasms of Bone and Related Conditions: Etiology, Pathogenesis, Diagnosis and Treatment. By Bradley L. Coley, M.D.; Second edition, 1960. New York: Paul B. Hoeber, Inc., Medical Division of Harper & Brothers. 10" x 6¾", pp. 880, with 649 illustrations and 31 tables. Price: $30.00.

OVER the past few years, there have appeared a number of books dealing with tumours of various regions and organs. Few have been able to draw from such a wealth of clinical material as Coley of the Memorial Hospital for Cancer and Allied Diseases in New York. Whereas the average orthopædic surgeon sees no more than a score of primary bone neoplasms in his lifetime, Coley's figures run into hundreds. Furthermore, his thirty years' experience in the Bone Tumour Service at the Memorial Hospital is supplemented by his father's forty years spent in treating cancer in bone.

The second edition of "Neoplasms of Bone and Related Conditions" runs to 863 pages, of which 77 are devoted to the citation of references. The book is divided into sections: "Classification, Ætiology, and Diagnosis"; "Benign Tumours and Tumourlike Lesions of Bone"; "Primary Malignant Tumours"; "Tumours Involving Bone by Extension"; "Metastatic Tumours Involving Bone"; "Tumours of Bone in Special Localities"; "Surgical Treatment"; "Radiation Therapy"; "Constitutional Therapy" (including a chapter on Coley's toxins); and "Lesions of the Skeletal System that may Simulate Neoplasms of Bone". The text is written in a conversational style rather than in stereotyped conventional language, and we found that it could be read more quickly than average literature. The illustrations are of good quality; but some radiographs have not tolerated reproduction as well as the author might have liked.

Coley goes into differential diagnosis very clearly and one purpose of the work is to help any of the specialties which deal with bone tumours in this regard. Thus, a proportion of the matter is repeated, sometimes more than twice. He refers to several "new entities"—chondromyxoid fibroma and aneurysmal bone cyst, and also juxtacortical low-grade osteosarcoma (parosteal osteoma) and malignant angioblastoma (adamantinoma). Also, in this second edition he has rewritten and revised a large proportion of the text.

The section on malignant tumours is excellent, and it is probably the best part of the book. Coley has an open mind on the rôle of surgery and radiotherapy in osteosarcomas. He stresses the value of serum alkaline phosphatase estimations in determining the results of treatment and in detecting recurrence or metastases. Nevertheless, he has no doubt that megavoltage irradiation can influence bone tumours more effectively and with decreased ill effects than was the case with conventional X-ray therapy. Ewing's tumour and reticulum-cell sarcoma are reviewed in a manner befitting such unique clinical experience; but it is difficult to comprehend why he recommends Coley's toxins, nitrogen mustard and irradiation in their management.

In prescribing irradiation for hæmangioma of bone and certain benign cystic lesions, Coley would be at variance with a large proportion of radiotherapists. The former is a very common condition and rarely causes symptoms; most workers agree that another lesion should be suspected to account for pain. With regard to cystic lesions, it is held that X rays should not be applied to non-malignant conditions when other forms of treatment are available.

There are a few misprints and some obvious errors, but this seems to be an endemic complaint in these columns. The book is worthy of a place on the hospital library shelves rather than on those of the busy clinician. However, sections of it are essential reading for every orthopædic surgeon, radiotherapist, radiologist and pathologist.

The Divided Self: A Study of Sanity and Madness. By R. D. Laing; 1960. London: Tavistock Publications; Melbourne: The Melbourne University Press. 8½" x 5½", pp. 240. Price: 25s. net (English).

IN this book Dr. R. D. Laing sets forth his investigations into those individuals, commonly referred to as schizoid, who feel both an estrangement and lack of contact with their social environments and an unreality within and of themselves. This fundamental insecurity predisposes to a frank schizophrenic psychosis. These unhappy people are in constant fear of losing their already shaky identities under the dominance of others—engulfment; or they fear that reality will fill the vacuum within their personalities—implosion; or they anticipate loss of identity through being converted into and becoming automata—petrification. The catatonic's echopraxia, flexibilitas cerea, etc., are interpreted by Dr. Laing as the "concealed indictment of the manipulating examiner". Many of the schizoid's and schizophrenic's symptoms are a false front and a dissembling, because the patient, to quote the author's words, "is frightened not to seem to further what he imagines to be the purpose that someone else has in mind for him". There is a good chapter on self-consciousness. The insecure person may feel that his existence becomes more real when others take notice of him. Those who suffer a discontinuity in the temporal self may be reassured by keener awareness of the spatial self. On the other hand, self-consciousness may spell awareness of potential dangers to the self and prompt a further retreat from reality. Several of the author's cases and one reported by two other psychiatrists are discussed at some length.

Dr. Laing claims to have set forth his thesis in existential terms, without having applied directly any established existential philosophy. His method of approach has met with some success in penetrating barriers and promoting a flow of communications between himself and a difficult class of patients. The book will interest psychiatrists mainly; but the attention of theologians, philosophers and poets also is invited by the publishers. There is a list of over two hundred references.

The Principles and Practice of Medicine: A Textbook for Students and Doctors. By Sir Stanley Davidson, B.A., Cantab., M.D., F.R.C.P., Edin., F.R.C.P., Lond., M.D., Oslo, F.R.S., Edin.; Fifth Edition, 1960. Edinburgh and London: E. & S. Livingstone Ltd. 8½" x 5", pp. 1128 with many illustrations. Price: 35s. (English).

AGAIN the rapidity with which a new edition has appeared—the fourth edition appeared only two years ago, with a reprint intervening—is in itself sufficient testimony to the popularity of this book, which must have few rivals in the world as a textbook for students in point of total sales, having now been translated into Spanish for sale in Spain and in South America.

The frequency with which new editions have had to be prepared in itself must have enhanced the value of the book, by ensuring that it embodies the most recent information available within the scope that it sets out to cover. The sections on therapy refer to the most recent agents available. This is of particular importance to students who, as yet fortunately immune to the barrage of trade literature directed at graduates, nevertheless feel that they may well be missing something important by adhering to recognized textbooks.

This book continues to provide the kind of pithy, tabular, yet up-to-date and authoritative account of medical diseases which has made it so deservedly popular, particularly amongst students.

How to Cook for an Ulcer. By Eileen Keane; 1960. Sydney: Angus and Robertson Ltd. 7¾" x 5¼", pp. 46. Price: 7s. 6d.

OCCASIONALLY it is our delight to read a book which we can praise unconditionally, and here is one. Written for the "fellow-sufferer" of the ulcer patient—namely, his wife—by a fellow-sufferer of many years' standing, it proves that grills are not the beginning and the end, and rescues the patient from the grisly fate of the gastronomic outcast by showing how, with a little adjustment, family meals can be served which are at once suitable for him and varied and pleasing for everybody else.

After a brief summary of the "whys" and "why nots" (much more satisfactory than the bare "do's" and "dont's"), Mrs. Keane generalizes on the substitutions which make ordinary meals possible for the ulcer man—asparagus and celery instead of onion for flavouring, potato thickening instead of flour for gravies and sauces, and so on. Over 80 detailed recipes are given, including everything from soup through fish, *entrée* and meat course to delicious deserts, cakes, pastries and beverages. One sees how, if it is properly prepared, even strawberry jam tart need not be renounced.

Much imagination and skill has gone into the preparation of this book—indeed, we succumbed to the tempting sound of the kidney and bacon pie, as well as veal chops with bananas and several other dishes, which were tried on a family and warmly approved.

How wonderful if this book was invariably to accompany those depressing diet sheets handed to ulcer victims by their well-meaning but unimaginative doctors! Tailor-made for Australian kitchens and Australian palates as it is, we think it should have a place in every doctor's library, on every dietitian's desk and on every "fellow-sufferer's" kitchen shelf.

The Medical Journal of Australia

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THE CONVENTION AND PROFESSIONAL UNITY.

THE Convention held during the last week-end in November to consider the constitution of an Australian Medical Association (see page 986) was described by Dr. A. J. Murray as Australia's first national medical gathering. This is probably not an overstatement. There have been many larger gatherings, with members drawn from many sections of the medical profession, but none so truly and officially representative of the various groups that make up the organized medical profession in this country. It was an historic occasion for this reason alone, but still more because of what the Convention was concerned to do. The idea of a national medical association was conceived some time ago and, despite certain heart-burnings, was accepted by the six Branches of the B.M.A. in Australia after careful consideration and consultation by Branch Councils with their members. That issue was settled before the Convention was called. The vital issue before the Convention was the shaping of a body that would effectively represent and be accepted by the whole medical profession in Australia. This ideal has never been far from the minds of those charged with the planning of the new association since its conception. It would have been relatively simple to form a new association by changing the names of the six Branches of the B.M.A. in Australia, making a few administrative arrangements and carrying on very largely as at present. No attention need have been paid to the variety of medical bodies outside the main stream of the B.M.A. in Australia, with their own objects and leadership, and in many cases with their own proud traditions inherited from a parent body in the Old World. However, the Federal Council, seized with the importance of unity, set itself to find a formula that would bring the various sections of the profession together. It was not to be a superimposed unity, reluctantly accepted and enforced by a dominating clique, for that would be no true unity at all; it had to be a unity of the spirit, desired by all and voluntarily accepted in a common loyalty to the profession and to medicine. This was the ideal set before the steering committee[1] appointed by the Federal Council to devise a constitution, and in its light negotiations were conducted, plans were made and the Convention was called.

The result was the bringing together in one place for a week-end of leaders of every section of the profession that could be thought of (if anyone was missed it was not for want of trying) and the placing before them of a draft constitution of a national medical association which the President of the Federal Council with pardonable optimism described as "a blueprint for unity". The specific provisions designed to promote organic unity were those relating to affiliation. As presented in the draft, they opened the way for any national medical body to be linked with the new association in such a way that it would have representation on the governing bodies of the association and an active voice in its affairs if it undertook to submit to the decisions of the whole body on matters affecting others as well as its own members. The Convention quickly appreciated—as indeed the Federal Council and others had appreciated before the Convention began—that the terms of affiliation in the draft constitution were unlikely to commend themselves to all the bodies eligible for affiliation, and sincere efforts were made to modify them so as to make them acceptable without at the same time becoming meaningless. These efforts were only partly successful, if we may judge by results, for only a minority of eligible organizations indicated their intention to affiliate. At the same time the representatives of the Royal Colleges confirmed the position, already stated in a letter to the Federal Council, that for stated reasons of internal organization and policy they were unable to seek affiliation. In the circumstances some members of the Convention thought that the whole idea of affiliation should be abandoned, but the Convention in its wisdom was unwilling to do this. The provisions for affiliation remain, complete with a voice in the proceedings of the Federal Assembly and an obligation not to take secret unilateral medico-political action that will involve others, but without active restraint on that action.

The fact that most eligible bodies, and notably the Royal Colleges, have indicated that they will not affiliate with the new Australian Medical Association is on the surface of things disappointing. But the position is not in fact without encouragement. If the planning of the constitution failed to secure any considerable measure of organic unity, it was not for want of good will or hard work on the part of those responsible, and the Convention itself did much to promote unity of the spirit. We must respect the good faith of those who find difficulty in the way of affiliation of an Australasian body with an Australian body, and who see their destiny running parallel to the Australian Medical Association, separate but not by that token in a position of antagonism. The protestations made that members of specialist bodies and their leaders would as individuals be loyal members of the Australian Medical Association in their own right cannot be dismissed as lip service. Expressions of concern for genuine unity, heard on every hand at the Convention, must be believed and remembered and nurtured. To the cynic, of course, this may be so much nonsense. But cynicism will achieve nothing in this situation, except to undermine the real measure of understanding that has been reached. There are plenty of practical difficulties and, no doubt, human

[1] The members of the steering committee were Dr. H. C. Colville, Dr. A. J. Murray, Dr. W. F. Simmons, Dr. R. H. Macdonald, Dr E. F. Thomson and Dr. J. G. Hunter.

ambitions and prejudices in the way. The situation is not all sweetness and light. Nevertheless, worthwhile progress has been made, and with goodwill, sincerity and commonsense this can be consolidated and built on to the benefit of everyone.

Current Comment.

THE "CLOUD BABY".

PATHOGENIC organisms, particularly staphylococci, acquired by new-born infants in hospital nurseries are responsible for much minor infection, such as impetigo, pyoderma and conjunctivitis, and also for more severe infections and even death. The infant at birth is free of staphylococci but rapidly acquires them in a hospital nursery. Severe infection can follow colonization with other strains of staphylococci. There is no agreement yet as to the mode of infection between infants, some believing that air-borne particles containing staphylococci pass from one baby to another, others that the infection is carried by the hands of nurses and other personnel or by contaminated articles. H. F. Eichenwald, O. Kotsevalov and L. A. Fasso[1] have studied the matter in great detail and have put forward a revolutionary concept. They state that in any collection of babies some will be asymptomatic nasal carriers of the staphylococcus. Others will be nasal carriers of the same strain of staphylococcus and have also clinically obvious pyoderma. However, investigation has shown that most infants with impetigo actively disseminate staphylococci into the surrounding air. (Dissemination is arbitrarily defined as more than six staphylococci per 10 cubic feet of air collected from around the baby.) Among the asymptomatic carriers about one-half disseminate staphylococci, while the remainder do not.

The asymptomatic infant disseminators have been called "cloud babies" because they are surrounded by a cloud of staphylococci. In the investigation the air was collected from around the baby by two different types of impinger which filtered out the air-borne particles. Five of these were arranged horizontally about the infant with the orifices 12 inches from the body with the infant asleep and motionless, 20 cubic feet of air passing through each impinger in one hour. The particles were filtered from the impinger fluid through a membrane, which was later placed on an agar plate; the organisms were then grown and the colonies counted. With the "cloud babies" aerial contamination remained relatively constant whether the infant was or was not in a plastic bag which covered the limbs and trunk but not the head. On the other hand, babies with pyoderma disseminated many bacteria from the body or limbs.

"Cloud babies" were found most commonly in outbreaks in which there was an unusually high proportion of colonized infants. Administration of 25 mg./kg./day of novobiocin to each new arrival in the ward, continued until four days after their discharge from hospital, removed infection in almost all babies, and no "cloud babies" appeared. Three babies treated in this way from birth and not showing at any time nasal infection with staphylococci were introduced into another ward free from "cloud babies". Within four days "cloud babies" appeared, followed by more in subsequent days. The authors considered the possibility that the three babies had brought a "cloud factor" with them from the original nursery, and that this proved capable of spread to other infants, converting a non-disseminating carrier of *Staph. aureus* to a "cloud baby". They made an extensive study to determine what could be this "cloud factor". It finally appeared reasonable to postulate that a factor promoting cloudiness might be one or more respiratory viruses whose only observable action on the infant was to promote the dissemination of the staphylococci. Adenovirus Type 2 was recovered from the "cloud babies" in one outbreak and ECHO virus Type 20 in another epidemic. Non-disseminating carriers showed no viruses.

According to Eichenwald, Kotsevalov and Fasso, the "cloud baby" represents "an unusual example of viral-bacterial interaction since, in the strict sense of the word, the two agents do not act synergistically. Their presence in the same patient does not necessarily result in the appearance of overt disease but rather is associated with an increase in aerial dissemination of the bacterium". If this statement can be confirmed, it introduces an entirely new conception into epidemiology, especially in relation to contagiousness.

Relevant to this, though otherwise unrelated, is a recent English report which opens up new possibilities in the control of staphylococci. Believing that air-borne particles from an infected nose are the most important means of transmission of staphylococci from one infant to another, S. D. Elek and P. C. Fleming[2] have sprayed wards and nurses daily with a new penicillin derivative, BRL 1241, marketed by Beecham Research Laboratories as "Celbenin". Spraying with one gramme of BRL 1241 dissolved in 20 ml. of water four times a day gave best results. With this method the nasal cavities of babies and staff became free of staphylococci in a few days. No staphylococci resistant to BRL 1241 have been found.

A RESPIRATORY PROTECTION CODE.

THE incidence of industrial diseases affecting the respiratory system is a continuing problem for workers, employers, governments, insurance companies, safety organizations and the medical profession alike. The number of workers found to be affected by industrial respiratory diseases tends to increase each year. This is partly a result of earlier detection through mass X-ray examinations, but is principally due to increasing industrialization, and occurs in spite of advances in industrial safety engineering and education, and safety measures enforced by various statutory authorities, government departments and industry itself. The principal respiratory disease concerned is silicosis, which affects the lungs of workers in a very wide range of industries, including metal mining, water and sewerage, gas making, chemicals, sandstone, metal trades, brick making, glass, paint and many others. The other main disease is pneumonoconiosis, affecting coal miners. The total annual cost of these diseases is difficult to assess but it is believed that compensation payments for the whole of Australia are now more than £1,500,000 each year. A "hidden" cost is in the loss of workers, many of them highly skilled, who become prematurely incapacitated through industrial respiratory diseases.

The most effective preventive measure is the wearing of respiratory protective devices. However, for these to provide proper protection they must be correctly selected, used and maintained, there must be confidence in their effectiveness and there must be adequate knowledge of the conditions under which they should be worn. In an endeavour to encourage the wearing of protective devices in any situation involving a risk of injury to the respiratory system, the National Safety Council asked the Standards Association to prepare a uniform code covering the selection, use and maintenance of these devices. The National Safety Council felt that such a code, if adopted throughout the country, would greatly help in promoting uniformity in procedure and in understanding of the functions and limitations of respiratory protective devices.

The Standards Association has now completed the code, which is being issued as Australian Standard No.

[1] *Amer. J. Dis. Child.*, 1960, 100:161 (August).

[2] *Lancet*, 1960, p. 569 (September 10).

CZ. 11—1960. It deals first in general terms with the principles of respiratory protection and classifies inhalation hazards as (*a*) nuisance dusts, which cause discomfort only and have no bodily effect unless inhaled in substantial quantities, (*b*) toxic dusts, which may, even in small quantities, damage the body tissue, (*c*) toxic mists, which are wet fog-like droplets containing toxic or tissue-damaging materials, (*d*) toxic smokes and metallic fumes, which comprise particles much finer than dust or mist particles and are toxic or tissue-damaging, (*e*) atmospheric contaminants, consisting of gases or vapours, which may have nuisance or toxic effects and (*f*) deficiency of oxygen in the atmosphere, which is a hazard to be considered in vats, tanks, pits, pipes, flues, silos, reaction vessels, sewers, wells and similar confined places. The code goes on to describe the various types of protective device available, which, broadly classified, may be of the air-purifying type, or the supplied air type. A section of the code is devoted to the selection of the correct device for the particular hazard or situation involved, and another section then provides guidance on the use of the devices. A final section deals with the maintenance of protective devices.

This code was prepared by a committee representing many interests, including the British Medical Association, fire authorities, departments of health, safety organizations, mining bodies, etc. During its preparation the code aroused much interest overseas, and several countries commented favourably on the draft proposals. As a necessary adjunct to the code the Standards Association is at present working on the preparation of standard specifications for the types of respiratory protective device covered by the code. Copies of the code may be obtained from any office of the Standards Association of Australia, located in the State capital cities and at Newcastle. The price is 7s. plus postage.

CHRYSOTHERAPY IN RHEUMATOID ARTHRITIS.

GOLD, in elemental form, has been employed for centuries as an antipruritic to relieve the itching palm.[1] However, its medicinal use was stimulated by Robert Koch's observation that the tubercle bacillus was adversely affected by low concentrations of gold salts, and these were widely used for the treatment of tuberculosis after World War I with disappointing results. Possibly because it was believed by some that rheumatoid arthritis was a form of tuberculous disease, studies of the therapeutic value of gold were extended to arthritis. Gold was first used in rheumatoid arthritis by Lande[2] in 14 patients and by Pick[3] in two, the former reporting benefit and the latter none. However, chrysotherapy was brought to the attention of the medical profession at large by the favourable reports of Forestier in which he claimed beneficial results in a large series of cases of rheumatoid arthritis.[4,5,6]

Many reports on therapeutic trials with gold have since been published, and with few exceptions, it was found to be beneficial. However, the only study which conformed to modern "double-blind" control requirements, in which neither the physician nor the patient knows which subjects receive gold and which placebos, was the trial reported by Fraser in 1945.[7] As a result, the Empire Rheumatism Council arranged a controlled trial of gold therapy in rheumatoid arthritis, the findings of which were recently published.[8] Such a trial was planned by the same body in 1938, but the outbreak of World War II prevented its being carried out.

Patients were eligible to be admitted to the trial if they had had active rheumatoid arthritis for not less than one year and not more than five years, if they had an erythrocyte sedimentation rate (Westergren) of at least 20 mm. in one hour, had not previously received gold therapy, and had not received steroid therapy or chloroquine in the three months preceding admission to the trial. Two hundred patients were divided equally into two groups, balanced for age, sex and duration of disease. Patients in the treated group were given a total of one gramme of sodium aurothiomalate over a period of 20 weeks by intramuscular injection of 50 mg. at weekly intervals; whereas those in the control group received 1/100,000 of the quantity of gold that the patients in the treated group were given, having a total dose of 0·01 mg. over 20 weeks in divided weekly doses. Both groups were given simple supportive measures, namely, rest, splints, aspirin and physiotherapy. The trial was designed to permit comparison of the two groups as regards clinical and functional assessment at 1, 3, 6, 12, 18 and 30 months after treatment was started, radiological change over 18 and 30 months, and the incidence of complications. The present report presents the results during the 18 months after the start of the trial—that is, to approximately one year after each patient had completed the course of treatment.

As assessed by functional capacity, subjective fitness, joint involvement, number of analgesic tablets taken daily, sheep cell agglutination titre, hæmoglobin and sedimentation rate, the gold-treated patients improved to a greater degree than the controls from the third month onwards, and the improvement was still apparent 12 months after the last injection was given, although it was reduced in degree. However, no such advantage was noted by radiological examination of the joints. The commonest complication was dermatitis, occurring in 21 treated subjects and in 7 controls. Four of the 21 treated subjects who developed dermatitis had to be admitted to hospital, but the condition of these patients was never very severe and their skin condition rapidly cleared up with dimercaprol. Four treated patients and three controls developed albuminuria, and in the four treated patients on gold the albuminuria disappeared spontaneously within a month. The results of renal function tests were normal. Purpura developed in two gold-treated subjects and in one control, and one of the treated patients with purpura also had hepatitis. Toxic reactions occurred in 35 of the treated group and in 16 of the controls. These reactions necessitated withdrawal of therapy in 14 of the treated subjects and in 4 of the controls.

A further assessment will be made after another 12 months' follow-up, but to date the advantage clearly lies with the gold group in respect of relief of symptoms. Although the improvement may disappear within the next few years, one cannot ignore any form of therapy which gives temporary amelioration of symptoms in a progressive and painful disease, unless it can be shown that the hazards of therapy outweigh the advantages, and this hardly seems to have been the case in this trial. The number of severe toxic reactions was relatively small, and steroid therapy and dimercaprol not available to earlier workers with gold salts can today effectively reduce the severity of such side effects and lessen the dangers of chrysotherapy. However, a note of caution is necessary. It was mentioned earlier that the extent of radiological progression in both groups was the same, which suggests that the natural course of the disease had not been altered. If this observation is confirmed two years after the completion of treatment, then it would appear that only symptomatic improvement may have been achieved at the expense of some toxic effects. Furthermore, the reduction of improvement in the treated group at the end of 12 months suggests that the improvement may be of a temporary nature only. It will therefore be most unwise to assume that the value of gold has been established until the next follow-up report from this group has been published. Its arrival will be awaited with great interest.

[1] GOODMAN, L. S., and GILMAN, A. (1955), "The Pharmacological Basis of Therapeutics", 2nd ed., Macmillan, New York.
[2] *Munch. med. Wschr.*, 1927, 74: 1132.
[3] *Wien. klin. Wschr.*, 1927, 40: 1175.
[4] *Bull. Soc. méd. Hôp. Paris*, 1929, 44: 323.
[5] *Lancet*, 1932, 1: 441.
[6] *Lancet*, 1934, 2: 646.
[7] *Ann. rheum. Dis.*, 1945, 4: 71.
[8] *Ann. rheum. Dis.*, 1960, 19: 95.

Abstracts from Medical Literature.

ORTHOPÆDICS.

Function of the Quadratus Plantæ Muscle.

E. KAPLAN (*Bull. Hosp. Jt Dis. N.Y.*, October, 1959) discusses the anatomy of the quadratus plantæ muscle in the sole of the foot, and also its morphology and function. The comparative anatomy and the possible relationship of abnormalities of the muscle to talipes equinovarus are considered in detail. The author points out that in certain animals whose foot adopts a supinated position the quadratus plantæ is absent. He notes that in a dissection of a child born with bilateral talipes equinovarus this muscle was absent. This finding could be coincidental, but is considered to be worth following up. The muscle acts by pulling into line the flexor digitor longus, thus preventing the long flexor of the toes from rotating the foot into supination and making the function of the tendon entirely flexion of the toes. The function of the various tendons in the foot during normal gait is fully discussed. The author concludes that the quadratus plantæ is an active pronator of the forefoot, working together and in combination with the long flexors of all the toes and the peroneus longus muscle.

Fracture of the Head of the Femur with Dislocation of the Hip.

M. S. BURMAN (*Bull. Hosp. Jt Dis. (N.Y.)*, October, 1959) describes a case of fracture of the head of the femur with posterior dislocation. The dislocation occurred in the usual manner in an automobile accident. On clinical examination the hip was found to be held in flexion, internal rotation and abduction with apparent shortening of the right lower extremity. A mass could be felt in the right buttock, but there was no crepitus. X-ray examinations revealed posterior dislocation of the right hip with a fracture of the head of the femur. The acetabulum was intact. Manipulation failed to reduce the dislocation and the hip was exposed through a Gibson incision and the head and neck replaced by means of a Thompson prosthesis. The patient made a rapid convalescence. In discussing this case, the author notes that this type of happening is probably more common than appears from the literature. The usual dashboard fracture of the hip is a posterior dislocation with the posterior rim of the acetabulum broken and displaced. It is pointed out that sciatic nerve injury is unusual in dislocation associated with a fracture of the head. This type of injury should be suspected when reduction is difficult or redislocation occurs. The first case was reported by Birkett in an autopsy in 1869. The head of the femur is apparently split as it is driven forcibly backwards against the strong edge of the acetabulum. The author suggests that it is also possible that avulsion of a piece of the head could occur through pull of the ligamentum teres. Reduction can usually be performed, but occasionally operation is necessary if reduction is impossible or cannot be maintained. Degenerative changes are likely to occur if irregularity of the socket is associated with the injury.

The Results of Hip Operations.

MARGARET SHEPHERD (*J. Bone Jt Surg.*, May, 1960) has followed up her previous review, published in 1954, of the results of a number of hip operations. She presents a detailed analysis, both statistical and clinical, of the results of cup arthroplasties, Judet arthroplasties, displacement osteotomies, and Girdlestone and Batchelor operations. It is noted that, generally speaking, patients with good results are more likely to attend for review than those with poor results. (i) The results of cup arthroplasty (584 cases reviewed) are considered unpredictable. Movement tends to decrease, and there is a tendency for pain and instability to increase after four or five years. In cases of osteoarthritis the best results are obtained when the operation is done on one hip only. (ii) Judet operations were too few (47 patients seen for the present review) to assess as completely, but the author considers that this or a similar type of replacement, preferably if the material could be bonded to the bone, has a big future in hip surgery. (iii) Displacement osteotomy is analysed, but a number of the records had been lost during the war. The chief hazard is the development of arthrodesis, and this is more likely when plaster fixation has been used. Relief of pain and stability are well maintained, but in general the results are less good, particularly as regards pain, when internal fixation has been used. Adduction of the upper fragment appears to be important in the production of a good result. This is less likely to be complete when internal fixation has been used. (iv) The Girdlestone operation and the Batchelor modification give good long-term results. Poor results were very few, but so were excellent results. This operation is associated with a long period of rehabilitation, but relief of pain is better in this operation than after any other operation reviewed.

Anterior Spinal Fusion for Tuberculosis.

A. R. HODGSON AND F. E. STOCK (*J. Bone Jt Surg.*, March, 1960) discuss 100 cases of spinal tuberculosis treated at the University of Hong Kong by radical excision of the tuberculous lesion and replacement with a bone strut and bone chips. Their method followed that described by Wilkinson in 1944. All patients were maintained for two years on anti-tuberculosis drugs. The age distribution was as follows: 40% of the patients were less than 5 years of age, 29% were aged 6 to 10 years, and 31% were 11 to 70 years of age. The tenth thoracic vertebra was most frequently involved, and the average extent of the involvement was three to four vertebræ. At operation 33 of the 100 patients had involvement of the lung and pleura. The authors consider that the spread was always from the spine and not, as had been suggested by other authors, that from the lung to the spine. The paravertebral abscess generally indicated the extent of the involvement. Paraplegia occurred in 35% of the patients, a higher incidence than usually reported. The authors found that a good recovery followed decompression and believe that paraplegia was always due to pressure and that treatment should be by early relief of pressure. Several patients had had posterior fusions performed on previous occasions, and the authors emphasize that the Hibbs or Albee method of fusion does not eradicate the disease focus as does the anterior approach. Complications encountered included pulmonary œdema and cardiac failure, generalization of the tuberculous condition, hepatic failure and post-operative pneumonia. Other less severe complications were post-operative pleural effusion, slipping of the rib transplant and penetration of the osteoporotic bone. This did not affect ultimate fusion. In some cases the strut fractured. Fusion was more rapid when iliac bone was used but the crest was too small for use in the younger patients. Progress of fusion was estimated by tapping the spinous process above the graft area. When fusion was occurring, the sound could be picked up by a stethoscope below the graft area. This occurred six to twelve weeks after operation, and the patient was then gradually mobilized over a period of six to eight weeks; the average hospital stay was five months and fourteen days. Patients have been followed for two to four years and the follow-up was almost complete. One patient relapsed. Pseudarthrosis occurred in two patients who had disc material left behind.

Myelography for Lumbar Disc Lesions.

E. LANSCHE AND L. T. FORD (*J. Bone Jt Surg.*, March, 1960) discuss the correlation of myelogram examinations with the findings at operation. Since Mixter and Barr's description in 1934 there have been a number of studies of myelograms. In 1949 Ford and Key found a 72% positive correlation. A further 100 patients in 1952 were examined and the correlation of the myelogram finding with the operative result was 60%. Since then myelography has been used more extensively and almost every patient suspected of having an intervertebral disc lesion has been examined. The authors consider 866 patients subjected to myelography since 1946. They describe their technique in which 5 to 6 ml. of "Pantopaque" are used; this is warmed to body temperature and then slowly injected into the subdural space. The authors illustrate the types of defects found. These are: (i) lateral indentation; (ii) hour-glass contraction; and (iii) sleeve defects. Lateral indentation and sleeve defects indicate lateral disc protrusion. Hour-glass narrowing indicates a central protrusion. If a block occurs, this may be complete or incomplete. Complete blocks suggest a cauda equina tumour, but may occasionally be due to an intradural disc extrusion. Disc lesions in this series were more common at the fourth lumbar intervertebral space than at the fifth. Central protrusion was twice as common in the fourth space than at the fifth. Discrepancies occurred in 14·6% of cases. These were as follows: in 5%, patients with apparently normal myelograms were

found to have abnormal discs at operation; in 7·9%, discs were found at different levels or on opposite sides to those indicated on the myelogram; in 1·7% the myelograms were abnormal, but no lesions were found at operation. Tumours were found in 1% of cases. The most frequent complication of myelography was headache; infection occurred in one case and the patient died from a brain abscess. The complications of arachnoiditis, pulmonary embolism and encystment of the dye were not found in this series.

Osteochondritis of the Knee Joint.

A. D. SMITH (*J. Bone Jt Surg.*, March, 1960) reports three cases of osteochondritis of the knee joint occurring in brothers, in each case following an injury to the knee. However, there was evidence of bilateral disturbance in all cases. Large loose bodies were removed, and the patients went on to live a full and active life. The author notes that the boys were all of similar anatomical type and that the lesions were almost identical in size and location. He discusses the theories of the cause of osteochondritis. The first is that trauma is the primary and most important factor. The second is that occlusion of an end artery causes sequestration of a piece of the lining of the joint. It is noted that cases supposedly due to trauma can be divided into two classes, those in which the condition occurs in adults, and those in which it occurs in children; in the second class, it occurs before closure of the epiphysis and the lesion is often multiple, appearing in other situations besides the knee, such as the hip and the spine. The author suggests that this multiple siting indicates an underlying metabolic or systemic factor. He notes experimental evidence of extensive branching blood vessels to the lower end of the femur with elaborate anastomoses, which appears to exclude arterial block as a cause. The degree of trauma necessary to produce experimental lesions is very great, and when produced, these lesions are due to fracture in areas of normal bone rather than to a necrotic bone change, as found in the naturally occurring lesion. The author notes the view that the tibial spine is an important traumatic agent, but points out that in cases reported with a lesion and a large tibial spine other sites are commonly affected. Treatment is discussed, and the author disagrees with those who advocate fixation of large pieces, stating that this will leave a sunken and irregular area, and recommends the removal of any obvious loose bodies. He states that if it is difficult to decide whether separation has occurred, then it is better to be conservative. He does not advocate plaster or other splinting and considers it sufficient to prohibit running, jumping and other athletic games. This policy has given him excellent results.

PÆDIATRICS.

Bilirubinæmia in Non-Erythroblastotic Premature Infants.

G. RAPMUND, J. BOWMAN AND R. HARRIS (*A.M.A. J. Dis. Child.*, May, 1960), reporting the results of a study at the Babies' Hospital, New York, found that more than 10% (18 patients) of a series of 171 premature infants who survived longer than 48 hours developed peak plasma total bilirubin concentrations exceeding 20 mg. per 100 ml. The great majority (16) of these infants developed neither clinical nor pathological signs of kernicterus. Considering the low incidence of kernicterus in untreated premature infants (1% or less) and the fact that most proved hyperbilirubinæmic infants do not develop this neonatal picture of kernicterus, the authors believe that preventive treatment of kernicterus in a premature infant should be an individual problem. Until the relationship of serum or plasma bilirubin concentrations to the development of kernicterus is clarified, they recommend that efforts be made to study further ways of identifying which babies are in danger of kernicterus and applying replacement transfusions only in selected instances; this is preferable to the routine application of replacement transfusion for hyperbilirubinæmic, non-erythroblastotic, normally reacting premature infants for the prevention of kernicterus. The authors were unable to demonstrate the existence of a critical peak concentration of plasma bilirubin in premature infants, above which kernicterus could be expected to develop.

Erythema Toxicum Neonatorum.

D. LÜDERS (*Pediatrics*, August, 1960) gives the first histological description of the lesions of erythema toxicum neonatorum, which is a characteristic eruption of the neonatal period consisting of large erythematous areas, macules, papules or pustules, or of combinations of these lesions. It is shown that these lesions are related to the pilo-sebaceous follicle. The papule of erythema toxicum neonatorum shows an accumulation of leucocytes with a predominance of eosinophils within the layers of the hair follicle just below the dermal-epidermal junction of the skin. The pustule of erythema toxicum is the result of an accumulation of these cells within the superficial epidermis encircling the hair. The papulo-pustular lesion shows a combination of both components. The microscopic changes associated with the macule and erythema are meagre; only a few perivascular eosinophils are present in the dermis. Since the papules and pustules of erythema toxicum neonatorum are related to hair follicles, the rash is possibly the result of some substance in the sebum which produces an eosinophilic response when the sebum is discharged into the pilo-sebaceous follicle. However, the true nature of erythema toxicum neonatorum remains obscure.

Idiopathic Epilepsy in Early Infancy.

A. DEKABAM (*Amer. J. Dis. Child.*, August, 1960) presents clinical and laboratory data which suggest that idiopathic epilepsy can occur in infants under one year of age, and which are compatible with the hypothesis that frequent daily attacks in themselves can cause marked and, at times, irreversible retardation of mental development if they occur during early infancy and continue for a prolonged period of time. The mechanism of slowing of development by frequent epileptic seizures is obscure, and can only be speculated upon. One possibility is that numerous attacks, even though brief, if they repeat themselves daily, can hamper the infant's alertness and sustained efforts to act on the environment and in turn to be acted upon by this environment in the broad sense of the word. This constant and complex interaction forms the basis of learning and progress. Since it does appear probable that certain developmental accomplishments are best acquired at definite ages, the lost opportunities with the passage of time may never be fully regained.

Effect of Tonsillectomy on the Incidence of Streptococcal Respiratory Disease and its Complications.

R. CHAMOVITZ *et alii* (*Pediatrics* September, 1960) have investigated a population of military men with acute streptococcal respiratory infections and present evidence indicating that individuals who have had a tonsillectomy are neither more nor less susceptible to acute streptococcal infections of the respiratory tract. Once individuals acquire a streptococcal infection, the clinical course of the acute illness is not modified appreciably by the presence or absence of the tonsils. However, if antibiotic therapy is withheld, suppurative complications occur less frequently in those patients who have had their tonsils removed. Tonsillectomy did not alter significantly the attack rate of acute rheumatic fever as a sequel of streptococcal infections, nor did it reduce significantly the development of valvular heart disease in patients with acute rheumatic fever. Moreover, it appears that streptococcal infections are less readily recognized in tonsillectomized patients and therefore are more likely to escape treatment appropriate for the prevention of rheumatic fever.

Early Diagnosis of Congenital Dysplasia of the Hip.

L. E. HARRIS AND J. R. HODGSON (*J. Amer. med. Ass.*, May 21, 1960) discuss the early diagnosis of congenital dysplasia and dislocation of the hip. They state that the abduction test seems to be the most easily applied test to achieve early diagnosis, and that it is easy to perform and requires a minimal degree of experience for adequate interpretation. They have used this test as a screening procedure in 11,010 newborn infants, about 90% of whom were subsequently examined regularly in well-child clinics. With this test, the average age of diagnosis of congenital dysplasia with dislocation was reduced from 14 to 4 months, all dislocations being discovered before weight-bearing age was reached. All the children in this series are now over 3 years old. The authors found that a negative result of the abduction test at birth does not rule out potential dislocation of the hip, and they consider that the test should be repeated regularly during the first 12 months of life. They state that other clinical signs suggestive of congenital dislocation of the hip are of limited value, especially in infants with bilateral dislocation, but should not be ignored.

British Medical Association.

CONVENTION ON AUSTRALIAN MEDICAL ASSOCIATION.

A CONVENTION to consider a constitution for the proposed Australian Medical Association was held on November 26 and 27, 1960, in the Robert H. Todd Assembly Hall, British Medical Association House, 135 Macquarie Street, Sydney. The President of the Federal Council of the British Medical Association in Australia, Dr. H. C. Colville, was in the chair.

Those present included members of the Federal Council, representatives of the six State branches of the B.M.A. and representatives of the following bodies: Royal Australasian College of Surgeons, The Royal Australasian College of Physicians, Royal College of Obstetricians and Gynæcologists (Regional Council in Australia), Australian College of General Practitioners, College of Radiologists of Australasia, College of Pathologists of Australia, Australian Society of Anæsthetists, Ophthalmological Society of Australia (B.M.A.), Australian Thoracic Society, Repatriation Department Medical Officers Association, Australian Federation of Medical Women, Australian Society of Allergists (B.M.A.), Special Group on Aviation Medicine (B.M.A.), Cardiac Society of Australia and New Zealand, Dermatological Association of Australia (B.M.A.), Australian Association of Neurologists, Neurosurgical Society of Australasia, Australian Orthopædic Association, Oto-Laryngological Association of Australia (B.M.A.), Australian Pædiatric Association, Australian Association of Physical Medicine and Rehabilitation (B.M.A.), Australasian Association of Psychiatrists, Australian Rheumatism Association (B.M.A.), Urological Society of Australasia, Gastroenterological Society of Australia, Commonwealth Medical Officers Association, Australian Post-Graduate Federation in Medicine, The Armed Services, Department of Public Health, Territory of Papua and New Guinea, Australasian Medical Publishing Company Limited.

Address of Welcome.

The chairman, Dr. H. C. Colville, in an address of welcome, said that the result of the Convention might well affect the conditions of medical practice in Australia for generations to come. A decision had been made by the six Branches of the British Medical Association in Australia to form an Australian Medical Association. The Federal Council had appointed a steering committee to prepare a draft constitution, and they had done an excellent job in that regard. In order to go ahead with the formation of an Australian Medical Association it was necessary to try to obtain the opinions of the medical profession in Australia as a whole, but naturally some eleven thousand medical practitioners could not be brought together for such a purpose. Therefore a representative cross-section of the medical profession had been invited to attend the Convention. It was hoped that those taking part in the discussion and voting would make their decisions as individuals rather than on the basis of block votes. It was also hoped that the younger men would play a major part in the Convention, as the matter being considered was one that would affect coming generations more than the present older generation. The one great objective should be to try to achieve through the Australian Medical Association unity of the whole medical profession in Australia. The unhappy results of divisions within the medical profession in other countries were well known. It was most important that the profession in Australia be united in order to resist any undesirable schemes that might be put forward affecting the practice of medicine. The draft constitution, which was before the Convention, might be looked upon as a blueprint for unity.

Messages of Greeting.

The General Secretary of the Federal Council, Dr. J. G. Hunter, then read messages of greeting from the chairman of the representative body of the British Medical Association, Dr. Talbot Rogers, and from the Secretary of the Parent Body of the British Medical Association, Dr. D. P. Stephenson.

Terms of Reference.

The following resolutions relating to the terms of reference of the Convention were proposed by Dr. A. J. Murray on behalf of the steering committee and adopted;

(i) That this Convention having been duly and properly convened, and representing as it does all sections of the medical profession in Australia, declares itself to be an appropriate body to consider and make recommendations on the constitution of the proposed Australian Medical Association.

(ii) That the matters decided upon by this Convention be forwarded to the Federal Council of the British Medical Association in Australia with a recommendation that they be incorporated in the Constitution of the proposed Australian Medical Association, and that the Federal Council be authorized to prepare a detailed constitution.

The Convention then proceeded to consider the draft constitution prepared by the steering committee.

Title.

A spirited debate took place on the name which the new association was to bear. There was enthusiastic support for the name "The Medical Association of Australia", but when it was put to the vote, the steering committee's recommendation, that it should be called "The Australian Medical Association", was adopted by a solid majority.

The steering committee's recommendation that the Australian Medical Association should be composed of its Constituent Associations was met by an amendment originating in the New South Wales Branch that the Association should be a federacy of the Constituent Associations. This provoked a debate centring around the question of autonomy of the State Branches in the light of the sovereign nature of the several States of Australia and the importance of Australia-wide unity. It appeared clear that everyone was agreed on both these points. The steering committee's recommendation was adopted.

Constituent Associations.

The steering committee's recommendation was accepted that Constituent Associations should be those medical associations of States and Territories of the Commonwealth of Australia which thereafter might become Branches of the Australian Medical Association.

Office.

It was agreed that the Association should be incorporated in Canberra and that its office should be established temporarily at 135 Macquarie Street, Sydney.

Objects.

The following objects, taken from the existing objects of the Federal Council of the B.M.A. in Australia, were adopted on the recommendation of the steering committee:

(*a*) On behalf of or in conjunction with the Constituent Associations to carry out any of the objects of such Associations but so far only as such objects are in accordance with the objects of the Australian Medical Association as herein expressed and to adopt and use all such means as are authorized by law for the attainment of such objects.

(*b*) The promotion either in conjunction with the Constituent Associations and/or Affiliated Organizations or other similar bodies or otherwise of medical and the allied sciences and the maintenance of the honour and interests of the medical profession.

(*c*) To hold or arrange for the holding of periodical meetings of the members of the Australian Medical Association and the medical profession generally or of any section or number of such members.

(*d*) In furtherance of the objects of the Australian Medical Association to circulate such information as may be thought desirable by means of a periodical journal which may be the journal of the Australian Medical Association and by the occasional publication of transactions or other papers.

(*e*) Subject to Clause of this Memorandum to grant sums of money out of funds of the Australian Medical Association for the promotion in Australia or elsewhere of the medical and allied sciences in such a manner as may from time to time be determined.

(*f*) To form a bond of union amongst the respective Constituent Associations and Affiliated Organizations and a medium through which their opinions can be easily ascertained or expressed and to maintain extend and promote the honour and/or interests of such respective Associations or Organizations.

(*g*) In furtherance of the objects of the Australian Medical Association to become a member of or subscribe to any other Association whether incorporated or not having objects altogether or in part similar to those of the Australian Medical Association.

(*h*) To collect and circulate statistics and other information relating to the medical or allied sciences or the medical profession.

(*i*) To advance and protect the general and social interests of the medical profession in Australia.

(*j*) To promote fair and honourable practice to suppress discourage or prevent malpractice or professional misconduct to settle disputed points of practice and to decide all questions of professional usage and courtesy referred to the Australian Medical Association by any Constituent Association or Affiliated Body for settlement or decision.

(*k*) To consider originate and promote improvements or alterations in the law relating to the medical profession or to the medical or allied sciences and to oppose or support same and for the purposes aforesaid to petition the Parliament of the Commonwealth of Australia or of any of the States and take such other steps and proceedings as may be deemed expedient for carrying out this object.

(*l*) Subject to any such restriction as may for the time being be imposed by law to purchase take on lease exchange hire or otherwise acquire any real and/or personal property and/or any rights or privileges necessary or convenient for the purposes of the Australian Medical Association and to sell improve manage develop lease mortgage dispose of turn to acount or otherwise deal with all or any part of the property of the Australian Medical Association.

(*m*) To borrow any moneys required for the purpose of the Australian Medical Association upon such security as may be determined and to make accept and endorse promissory notes bills of exchange and other negotiable instruments.

(*n*) Subject to the provisions of the *Companies Act* 1936 to invest the moneys of the Australian Medical Association not immediately required upon such securities as may from time to time be determined.

(*o*) To correspond with individuals or other bodies on any matter touching medical interests and by its moral influence and the exercise of a judicious supervision to prevent abuses in the profession.

(*p*) To consider any subject connected with the appointments of medical men to public institutions positions and services.

(*q*) To consider any question of medical polity referred to it for consideration by any Constituent Association or Affiliated Body.

(*r*) To further and promote the federation of the medical profession in the various States of the Commonwealth of Australia and to enter into all such agreements and generally take adopt and carry into effect all such steps as are by law authorized or required for such purposes or any of them.

(*s*) To assist either by donations or otherwise—

(i) necessitous members of the medical profession and their wives or husbands and all or any of their children;

(ii) organizations providing such assistance to such persons mentioned in (i) above.

The following additional object was inserted at the suggestion of the New South Wales Branch:

To maintain and endeavour to improve the standard of medical practice to the people of Australia, respecting at all times the dignity of the individual and the integrity of his personality.

Affiliated Organizations.

In introducing the discussion on affiliated organizations from the chair, Dr. Colville said that it had been assumed that all the various medical bodies in Australia would affiliate with the Australian Medical Association and that the term affiliation would not be closely defined. It was expected that there would be provision for affiliated bodies to have representation on the governing body of the Association, and that as a result a considerable advance would be made towards unity within the profession. However, he had received a letter from the heads of the three Royal Colleges in Australia which stated that the Australasian and international obligations of the Colleges precluded affiliation and which set out in some detail the attitude of those three colleges. The letter was read to the Convention.

An invitation from the chairman to speak further to the letter was responded to by Dr. T. M. Greenaway, President of The Royal Australasian College of Physicians, Dr. K. W. Starr, on behalf of the Council of the Royal Australasian College of Surgeons, and Dr. J. N. Chesterman, Chairman of the Australian Regional Council of the Royal College of Obstetricians and Gynæcologists. They referred to practical difficulties which lay in the way of affiliation from their respective points of view, and in particular to the fact that each of their Colleges had a significant component and sphere of interest that was outside Australia. Each of the three speakers expressed appreciation of and sympathy with the need for cooperation and unity throughout the medical profession in Australia.

The matter was then thrown open for general discussion. Opinions were expressed ranging from great disappointment at the unwillingness of the Royal Colleges to affiliate and pessimism about the future of the Association in the circumstances to the view that affiliation was assuming more importance than it deserved and that the Association might work very well without it. It was suggested that the way should still be left open for affiliation and that various possible aspects of the subject should be further explored. It was emphasized that the Australian Medical Association would be an association of medical practitioners, not representing any one group, and it seemed to be generally expected that the vast majority of members of the Royal Colleges would be members of the Australian Medical Association in their own right as they were at present members of the British Medical Association. The importance was stressed of ensuring that negotiations with governments on behalf of any section of the medical profession should be carried on by skilled negotiaters.

In summing up the discussion, the chairman said that it appeared clear that the Royal Colleges would not affiliate, that they considered that they had no legitimate concern with the internal administration of the Australian Medical Association, and that if a problem arose with the Government in which they were vitally interested, they would like to join with the Australian Medical Association in any approach made to the Government. At the same time, he imagined that there were some other bodies represented at the Convention that would wish to affiliate. He said that the implications of affiliation included representation on the Federal Assembly and on the Federal Council, according to the draft constitution, and pointed out that the Federal Assembly would deal with the affairs and welfare of the profession as a whole.

Dr. R. H. Macdonald then moved on behalf of the steering committee that any nationally organized medical body might, subject to the provisions of the by-laws, become affiliated with the Australian Medical Association.

During the discussion on this resolution, representatives of bodies other than the Royal Colleges that were likely to be eligible for affiliation were asked to express their views. Only a few said that their bodies would seek affiliation. The remainder of those who spoke, while expressing complete loyalty to the proposed Association and willingness to look to it for a lead in negotiations in medico-political matters, said that they would prefer not to seek affiliation. It was generally agreed that members of the various special bodies would be members of the Australian Medical Association in their own right. The resolution was adopted.

At a later stage of the meeting the following clause was adopted, to be inserted at this point in the constitution:

Any medical body so affiliated may have representation on the Federal Assembly and appropriate standing committees as here and hereafter provided.

The steering committee's next recommendation was as follows:

The right to affiliate of any nationally organized body with the Australian Medical Association shall be dependent on the following conditions:

That if the said organization formulates any policy or proposes any action which may reasonably be regarded as likely to involve any member or members of the medical profession other than its own members it shall submit such proposal to the Federal executive body (the Federal Council) before taking any action and will undertake to abide by the decision of that body as to whether the proposed action should or should not be taken.

This aroused vigorous discussion and strong criticism on the grounds that the wording was too hard and was likely to keep organizations from affiliating. Dr. G. C. de Crespigny, President of the South Australian Branch of the B.M.A., therefore moved an amendment so that the clause would read:

The right to affiliate of any nationally organized medical body with the Australian Medical Association shall be:

That if the said organization formulates any policy or proposes any action which may reasonably be regarded as likely to involve any member or members of the medical profession other than its own members in medico-political matters, it shall submit such proposal to the Federal executive body (the Federal Council) before taking any action.

This was accepted by the Convention with a substantial majority in its favour.

It was further resolved that affiliation should continue without interruption unless either party to the affiliation should give three months' notice to the other in writing of its intention to withdraw from the affiliation.

Membership.

A series of resolutions were then adopted relating to membership of the Association, which would be composed of four classes: ordinary members, extraordinary members, honorary members and associates.

Every ordinary member of a constituent association would be automatically an ordinary member of the Australian Medical Association on payment of the annual subscription as determined by the Federal Council. It was pointed out that this provision in no way interfered with the question of subscription to the member's own constituent association, which would remain autonomous in such matters.

It was agreed that the Association should have power to admit to certain of the privileges of membership, other than that of voting, members of the medical profession or persons distinguished in their sciences who are not eligible as ordinary members of the Association. They would be known as extraordinary members.

The Association should also have power to elect suitable persons as honorary members, with the further provision that a person who had been a member of the British Medical Association and the Australian Medical Association for a period of fifty years should become an honorary life member with full privileges and should not be required to pay an annual subscription as from the first day of January next succeeding the expiration of such period.

It was further agreed that the Association should have power to elect associates, and to admit them to limited privileges.

Federal Assembly.

Dr. A. J. Murray then moved on behalf of the steering committee that the principle of a Federal Assembly be approved. He expressed the view that a Federal Assembly was a vital part of such a body as was being formed, and questioned the validity of objections that had been made on such grounds as unwieldiness and expense. He said that the choice lay between an unwieldy Federal Council on the one hand and a Federal Assembly plus a small executive on the other. There was great value in having people attend an assembly and becoming better informed as a result of the interchange of views.

Dr. W. F. Simmons, in seconding Dr. Murray's motion, said that a democratic parliament was needed for the Association. One could not get a true cross-section of the profession with a small Federal Council. Careful examination of the cost factor had revealed that the cost of a meeting of an assembly along the lines suggested by the steering committee would be small.

A spirited and extended debate then took place, in which over a score of speakers participated. Strong opposition to the principle of the Federal Assembly was expressed in many cases, emphasis being placed on cost, unwieldiness and doubt of the wisdom of giving to such a body the power to make policy. It was questioned whether such a body, if it met only once a year, would be able to deal satisfactorily with all matters of policy. If, on the other hand, it was called together more frequently, it would be relatively costly in both money and time. Several speakers were of the opinion that the right vehicle to act as a sounding board for the profession was the State convention, not a Federal Assembly, which would not in fact touch the periphery of the profession. A number of speakers who favoured a Federal Assembly drew attention to the satisfactory experience of the Convention itself as an indication of the value of an Assembly, which would be of a similar character but smaller. When the motion approving the Federal Assembly principle was put to the meeting, it was carried by a large majority.

Details of the Federal Assembly were then considered. It was resolved that it should consist of (*a*) such officers of the Association as were members *ex officio*, (*b*) representatives of constituent associations on the Federal Council, (*c*) representatives of constituent associations on the Federal Assembly, and (*d*) representatives of affiliated bodies. It was decided that each constituent association having a membership of 50 or more should be entitled to elect one representative to serve on the Federal Assembly. Constituent associations should also be entitled to one additional representative for each additional 200 members. The scale of representation for affiliated bodies was determined at one representative for an Australian Medical Association membership between 200 and 500, plus one representative for Australian Medical Association membership over 500. Suitable provision was made for the appointment of proxies for representatives both of constituent organizations and of affiliated bodies.

It was determined that subject to the provisions of any statute the general control and direction of the policy and affairs of the Association should be vested in the Federal Assembly.

It was resolved that the Federal Assembly should hold an annual meeting and might also hold special meetings. No member of the Association who was not a member of the Federal Assembly should be entitled to take part in any meeting of the Federal Assembly except by invitation of the meeting. Provision was made for the convening of meetings of the Federal Assembly and for the conduct of its proceedings.

It was decided that the Federal Assembly should elect a chairman from amongst its members. He should not be the President of the Association. He should be elected annually but should not hold office for more than five consecutive years.

Federal Council.

A suggestion was brought forward that the title of the executive body should be the Executive Committee and not the Federal Council as proposed by the steering committee. This was debated and rejected by a large majority. During the debate the opinion was expressed that the title Federal Council was not only familiar but dignified and suitable for the body concerned. It was resolved that it should be composed of such officers of the Association as were members *ex officio* and two members elected by each of the constituent associations. A proposal of the steering committee that affiliated organizations should be represented on the Federal Council was rejected.

In the definition of the powers and duties of the Federal Council it was determined that it should be the duty of the Federal Council to carry out the general policy laid down by the Federal Assembly and to administer the affairs of the Association in accordance with the memorandum of association and the regulations and by-laws, and that the Federal Council should exercise such powers to do such acts and things as might be exercised or done by the Association and were not by the provisions of any statute or of the regulations or by-laws directed to be exercised or done by the Federal Assembly.

Officers.

It was resolved that there should be the following officers of the Association: a President, a Vice-President, a Chairman of the Federal Assembly and a Treasurer. These officers should be ex-officio members of the Federal Council.

The President should be elected annually at the annual meeting of the Federal Assembly, and should be eligible for reelection but should not hold office for more than three consecutive years. At the expiration of his term of office as President, he should be designated Immediate Past President, and should hold that position until succeeded by the next retiring President. He would then be designated Past President.

After further discussion it was decided that the President of the Association should also be the Chairman of the Federal Council.

The Vice-President should be elected annually at the annual meeting of the Federal Assembly and should be eligible for reelection.

The Chairman of the Federal Assembly should be elected annually and should be eligible for reelection, but should not hold office for more than five years.

The Treasurer should be elected at an annual meeting of the Federal Assembly and should be eligible for reelection.

A debate took place on whether the term President Elect should be substituted for the term Vice-President as proposed by the steering committee, but the term Vice-President was adhered to.

It was decided that no officer of the Association should, while holding office as President, Vice-President, Chairman

of the Federal Assembly, or Treasurer as the case might be, act personally as a representative of any constituent association or affiliated body.

Provision was made for vacancies in offices occurring as the result of death or resignation. The office should be filled until the next annual meeting of the Federal Assembly in the following manner: (*a*) In the case of the President, the Vice-President should discharge the duties of the office. (*b*) In the case of the Vice-President, the Federal Council should appoint a Vice-President in his place. (*c*) In the case of the Treasurer, the Federal Council should appoint a Treasurer in his place. If a vacancy occurred in any of the executive offices through circumstances otherwise not provided for, the Federal Council should make such appointment or other provisions as it deemed necessary for the discharge of the duties of the office until the next annual meeting of the Federal Assembly.

Committees.

Provision was made for the appointment of committees, of which the President of the Association, the Vice-President and Treasurer should be ex-officio members. It was further resolved that there should be standing committees of the Association with the power to coopt, that they should report to and act under the instructions of the Federal Council, and that they should have the power to appoint subcommittees.

A number of proposals were brought forward to the Convention by the steering committee relating to standing committees, and in particular to committees concerned with the interests of general practitioners, of specialists and of salaried medical officers. No attempt was made to reach finality on these committees, and approval was given to the carrying on of negotiations by the steering committee with interested bodies in the matter.

Officials, Expenses, Financial and Other Reports and Audit.

Provision was made for the appointment of officials, including a General Secretary, for the payment of expenses of members of the Federal Council, and for the preparation, auditing and publication of financial and other reports.

Conclusion.

At the conclusion of the meeting, Dr. T. M. Greenaway expressed on behalf of those attending the Convention their appreciation of the work of the Federal Council, of the steering committee, and of the chairman. To this Dr. Swinburne added the thanks of the Convention to the New South Wales Branch for its organization and hospitality, and Dr. Murray and Dr. Colville paid tribute to the work that had been done by the General Secretary, Dr. J. G. Hunter, the Assistant General Secretary, Dr. C. J. Ross-Smith, and the Executive Assistant, Miss H. Cameron. Dr. Colville thanked the meeting for the cooperation that had been given to him as chairman, describing the meeting as having proceeded in "a most orderly, friendly and helpful manner".

Out of the Past.

SEX AND "SERVANT-GALISM" IN VICTORIA.

[From "The Generative System and its Function in Health and Disease", by J. G. Beaney, Fourth Edition, Melbourne, 1883.]

THIS is a portion of the general question which is deserving of especial attention, inasmuch as it presents to us the initial step in the vicious course which has eventuated, and is still operating mischievously, in the ruin of thousands of the young of both sexes, but especially so in the male sex. The dangers with which the nursing period is fraught to the child are multitudinous, but none are so disastrous as the conduct of vicious servants, which I am about to consider.

We have in this colony also an element in the case which lends to it an aggravation that cannot be ignored. I allude to the low moral tone of the servant class, which is so manifest as to be apparent to every one, and which is a subject of deep and serious complaint on the part of all respectable householders. So glaring is this fact, that the relationship between the mistress and servant is daily widening, and it is found impossible to look upon the domestic servant in general as anything more than a depraved hireling, who enters service from no other motive than to discern what special advantages it may offer her for pilfering, or for personal comfort . . . .

From the close observation I have paid to this subject, and the frequent facts which have been brought to me, in reference to the vile conduct of many domestic servants towards children, I am fully convinced that, in the large majority of instances, where the minds of children are poisoned, and their sexual organs brought under their notice prematurely, we have to go to the nursery and the kitchen for the root of the evil.

This is not the place in which to enter fully into the great question of "servant-galism" in Victoria. The magnitude of the evil, and its remedy, must be left to the social reformer of the liberal school. The physician has but to point out the physical evils he meets with as the sequelæ of a system of immigration which has been of doubtful benefit to the colony. Not that there was ever a redundancy of female labour; on the contrary, there has always been too little; and now there is an absolute want of a copious stream of well-chosen women.

Hitherto the selections made at home have not been such as were likely to benefit the colony. If their morals were not bad, they were so utterly untrained in the duties of domestic service that their entree into a colonial family was a calamity rather than an advantage.

More than this, the great proportion of the best servants who were introduced a few years ago are married, whilst those who are left are, in the majority of cases, worthless and good for nothing, spending half their time in the registry offices; some, indeed, as is well known, alternating between prostitution and occasional service . . . .

Fortunately there are some admirable exceptions to this general rule. I could point to several families where truly high-minded girls are to be found—girls who are treasures to any house in which they may live, and with whom children of all ages would be perfectly safe. It is sad to have to think that such instances constitute a decided minority.

Medical Societies.

PÆDIATRIC SOCIETY OF VICTORIA.

A MEETING of the Pædiatric Society of Victoria was held on August 12, 1959, at the Royal Children's Hospital, Melbourne.

Symposium on Mongolism.

DR. A. STOLLER and DR. R. COLLMANN presented the interim findings of an investigation into the ætiology and epidemiology of mongolism. Their study, based on over 1000 cases in Victoria, was concerned particularly with the annual and seasonal incidence, the relationship of maternal age to the condition and possible geographical factors.

MR. J. THOMSON discussed the present state of knowledge of the genetics of the condition.

DR. D. PITT read a paper entitled "Mongolism—The Modern Management" (see page 971).

Dr. R. SOUTHBY opened the discussion, and commented briefly on the role of fœtal infection in mongolism, which he said was a new aspect for him opened up by Dr. Stoller. It seemed difficult to visualize that it could be responsible for mongolism, which presented such a definite pattern. It seemed that whatever happened to the fœtus it must always be at the same intrauterine period. He asked whether any abnormality had ever been demonstrated in the adrenal glands of mongoloids, whether radiological changes were present in the bones of affected children, and what was the highest grade of education a mongoloid child might be brought up to (he cited one who had reached Grade VI). The concentration of cases in Gippsland was interesting, as that was known to be a goitrous area.

DR. V. ASHBURNER said that he was glad to hear the genetic basis for mongolism put on a firmer footing. He stressed the fact that the prognosis for the individual mongoloid varied considerably. The late Dr. Phillips had always said that a high-grade mongoloid was never dwarfed. Victoria was the only State which admitted very young children to an asylum. In South Australia they could not be admitted under four or five years. The admission of children under the age of three years was a post-war phenomenon in Victoria. The question of training was

important. Workers such as Clark and Clark had found that in a range of semi-skilled operations defectives reached average ability, but took longer to get there, and that the methods of training had to be modified. Dr. Ashburner believed that it was illegal to admit children to an institution on the present certificates, which declared that the children were insane.

DR. KATE CAMPBELL asked Dr. Pitt what provision was being made by the day centres for those children when their parents died.

DR. JEAN MACNAMARA supported Dr. Pitt in his plea for keeping mongoloids at home at least until they were some years old. Any child progressed better at home as far as learning to walk was concerned, because there he was usually given the opportunity to do so, whereas that might not happen in an overcrowded institution.

DR. ELIZABETH TURNER asked Mr. Thomson what was the complementary type to the mongoloid, in the genetic abnormality he had referred to.

Dr. Stoller, in reply to Dr. Southby, said that he was not yet in a position to speculate whether infection, maternal characteristics or geography had any influence in causing mongolism, as data were still being collected. Hormone deficiency had been cited as a reason why oogenesis was affected, but so far none of the work done had been very conclusive in that respect. Workers in Lund, Sweden, had found raised protein-bound iodine values in some of the mothers, but suggested that there must be a combination of hormone upset, phenotype and outside stresses. There were radiological characteristics in the bones of those children, but Dr. A. F. Roche, of the Anatomy School, was making a study of the problem and would have more information to give later. Dr. Stoller also stressed the differences between mongoloids. He said that there were two in the day centres, one who typed very well and another who made all the speeches of welcome to visitors.

Dr. Collmann, in reply to Dr. Southby, said that in Gippsland there was a considerable concentration of cases in all years. A number of the cases occurred very closely together in time and in geographic location, but the data had been incompletely analysed as yet.

Mr. Thomson, in reply to Dr. Turner, said that the complementary condition to many workers had not been elucidated. Probably the offspring did not survive. He thought that a further avenue of genetic study would be to study the chromosomes of parents who showed some of the minor characters, such as the Simian crease.

Dr. Pitt, in reply to Dr. Campbell, said that day centres were conscious of the difficulties that could be encountered when the parents of mongoloids died, and were contemplating hostels. One was being planned at Oakleigh to house 15 children. He thanked Dr. Ashburner for drawing attention to the illegality of the present certification forms for children. He thought that an institution, to be able to function efficiently, should have some control over the question of who was admitted, and hoped that the new legislation would achieve that object.

Medical Matters in Parliament.

HOUSE OF REPRESENTATIVES.

THE following extracts from *Hansard* relate to the proceedings of the House of Representatives.

November 16, 1960.

Penicillin.

MR. SNEDDEN: My question is directed to the Minister for Health. Is it true that many viruses have built up resistance to standard penicillin and that research overseas has developed penicillin more potent than that currently produced by the Commonwealth Serum Laboratories? If this is so, will this advanced penicillin be imported into Australia and will it be manufactured by the Commonwealth Serum Laboratories?

DR. DONALD CAMERON: Penicillin is not active against virus diseases; it is active against bacterial diseases. It is a fact that there have been considerable problems of penicillin resistance and recently a new form of penicillin has been discovered or, perhaps I should say elaborated, overseas. It is confidently expected that this new form will be much more potent and will overcome many, although not all, of the problems of penicillin resistance by organisms. So far as I know, it has not yet been imported into Australia, although no doubt it soon will be. We hope to be able to manufacture the new form in the Commonwealth Serum Laboratories.

November 17, 1960.

Hospital Benefits Organizations.

MR. WHITLAM asked the Minister for Health, upon notice:

1. Which are the ten largest hospital benefits organizations?

2. What percentage of contributors to registered hospital benefits organizations contributes to each of these ten?

3. What are the (*a*) reserves and (*b*) operating expenses of each of these ten organizations?

DR. DONALD CAMERON: The answers to the honourable member's questions are as follows:

1 and 2.

The Hospital Contribution Fund of New South Wales—29 per cent. of contributors.

The Hospital Benefits Association of Victoria—16 per cent. of contributors.

The Medical Benefits Fund of Australia Limited—11 per cent. of contributors.

The Mutual Hospital Association Limited—6 per cent. of contributors.

The Hospital Benefits Fund of Western Australia—6 per cent. of contributors.

National Health Services Association of South Australia—3 per cent. of contributors.

The Manchester Unity Independent Order of Oddfellows in Victoria—2 per cent. of contributors.

Australian Natives Association, Victoria—1 per cent. of contributors.

Friendly Societies Health Services, Western Australia—1 per cent. of contributors.

3. This information is regarded as confidential in respect of individual organizations. However, the aggregate figures for the above organizations are:

(*a*) £8,220,567 as at 30th June, 1960, to cover the contingent liability for benefits to 7,208,000 contributors and dependants.

(*b*) £1,373,456 for financial year 1959-60.

Medical Benefits Organizations.

MR. WHITLAM asked the Minister for Health, upon notice:

1. Which are the ten largest medical benefit organizations?

2. What percentage of contributors to registered medical benefits organizations contributes to each of these ten?

3. What are the (*a*) reserves and (*b*) operating expenses of each of these ten organizations?

DR. DONALD CAMERON: The answers to the honourable member's questions are as follows:

1. and 2.

The Medical Benefits Fund of Australia Limited—48 per cent. of contributors.

The Hospital Benefits Association of Victoria—14 per cent. of contributors.

The Mutual Hospital Association Limited—5 per cent. of contributors.

The Hospital Benefits Fund of Western Australia—5 per cent. of contributors.

The Manchester Unity Independent Order of Oddfellows in New South Wales—3 per cent. of contributors.

National Health Services Association of South Australia—3 per cent. of contributors.

The Manchester Unity Independent Order of Oddfellows in Victoria—2 per cent. of contributors.

Australian Natives Association, Victoria—1 per cent. of contributors.

The Grand United Order of Oddfellows New South Wales—1 per cent. of contributors.

Friendly Societies Health Service, Western Australia—1 per cent.

3. This information is regarded as confidential in respect of individual organizations. However the aggregate figures for the above organizations are:

(*a*) £4,251,804, as at 30th June, 1960, to cover the contingent liability for benefits to 7,311,000 contributors and dependants.

(*b*) £1,936,956 for financial year 1959-60.

Naval, Military and Air Force.

APPOINTMENTS.

THE following appointments, changes, etc., are published in the *Commonwealth of Australia Gazette*, No. 76, of November 3, 1960.

NAVAL FORCES OF THE COMMONWEALTH.

Permanent Naval Forces of the Commonwealth (Sea-Going Forces).

Confirmations in Rank.—Surgeon Lieutenant (for Short Service) (on probation) Robert Charles Mulholland is confirmed in the rank of Surgeon Lieutenant (for Short Service), with seniority in rank of 2nd July, 1959.

AUSTRALIAN MILITARY FORCES.

Australian Regular Army.

Royal Australian Army Medical Corps (Medical).

The Short Service Commissions granted to the following officers are extended until dates shown:—Captains (Temporary Majors) 2/40188 F. N. Dwyer, 14th April, 1961, and 2/40187 F. A. Lilier, 2nd September, 1962.

Citizen Military Forces.

Northern Command.

Royal Australian Army Medical Corps (Medical).—1/39164 Captain I. R. Ferguson is transferred to the Reserve of Officers (Royal Australian Army Medical Corps (Medical)) (Northern Command), 3rd August, 1960.

Eastern Command.

Royal Australian Army Medical Corps (Medical).—2/217015 Captain V. W. Bow is transferred to the Reserve of Officers (Royal Australian Army Medical Corps (Medical)) (Eastern Command), 23rd August, 1960. *To be Captain (provisionally), 19th September, 1960*—2/127091 John Lansdell Paine.

Southern Command.

Royal Australian Army Medical Corps (Medical).—3/101026 Major J. W. C. Riddell is absorbed within a vacancy in the authorized establishment of Majors with pay and allowances of that rank, 1st July, 1960. The following officers are transferred to the Reserve of Officers (Royal Australian Army Medical Corps (Medical)) (Southern Command):—Majors 3/157154 T. H. Steel and 3/123415 T. J. Walsh and Captains 3/101029 J. M. Court, 1st July, 1960, and F3/1583 J. Finney, 21st September, 1960. *To be Captains (provisionally)*—3/170693 John Simon Hamilton, 13th September, 1960, and 3/170692 Peter James Phillips, 27th September, 1960.

Central Command.

Royal Australian Army Medical Corps (Medical).—The following officers are transferred to the Reserve of Officers (Royal Australian Army Medical Corps (Medical)) (Central Command), 22nd August, 1960:—Captains 4/31955 J. G. Sweeney and 3/87595 J. G. Bundey. 4/35477 Captain (provisionally) J. N. Sladdin relinquishes the provisional rank of Captain, 26th August, 1960, is transferred to the Reserve of Officers (Royal Australian Army Medical Corps (Medical)) (Central Command) and is granted the honorary rank of Captain, 27th August, 1960.

Reserve Citizen Military Forces.

Royal Australian Army Medical Corps (Medical).

The following officers are placed upon the Retired List and are granted military titles equivalent to the substantive or honorary ranks shown, with permission to wear the prescribed uniform, 31st October, 1960.

Northern Command.—Captain (Honorary Major) C. J. Constable and Captain G. M. Redshaw.

Southern Command.—Lieutenant-Colonel J. C. Stewart and Captains H. T. Hayes and W. H. Rolph.

THE following appointments, changes, etc., are published in the *Commonwealth of Australia Gazette*, No. 77, of November 10, 1960.

DISEASES NOTIFIED IN EACH STATE AND TERRITORY OF AUSTRALIA FOR THE WEEK ENDED NOVEMBER 12, 1960.[1]

Disease.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Northern Territory.	Australian Capital Territory.	Australia.
Acute Rheumatism	6	..	1	..	..	..	..	..	7
Amœbiasis	..	..	..	..	..	..	..	..	..
Ancylostomiasis	7	..	..	..	..	..	7	..	14
Anthrax	..	..	..	..	..	..	..	..	..
Bilharziasis	..	..	..	..	..	..	..	..	..
Brucellosis	..	1	..	..	..	..	..	..	1
Cholera	..	..	..	..	..	..	..	..	..
Chorea (St. Vitus)	1	..	..	..	..	..	..	..	1
Dengue	..	..	..	..	..	..	..	..	..
Diarrhœa (Infantile)	4	8(4)	2(1)	..	..	..	13	..	27
Diphtheria	..	..	3	..	..	..	..	..	3
Dysentery (Bacillary)	..	7(7)	2(2)	1(1)	2(2)	..	..	..	12
Encephalitis	1	..	..	1(1)	..	..	..	1	3
Filariasis	..	..	..	..	..	..	..	..	..
Homologous Serum Jaundice	..	..	..	..	..	..	..	..	..
Hydatid	..	..	..	..	..	..	..	..	..
Infective Hepatitis	208(104)	77(41)	21(13)	40(30)	11(7)	1	..	6	364
Lead Poisoning	..	..	4(1)	..	..	..	..	..	4
Leprosy	..	..	..	..	..	..	..	..	..
Leptospirosis	..	..	..	..	1	..	..	..	1
Malaria	..	..	1(1)	..	..	..	..	..	1
Meningococcal Infection	..	3(3)	..	..	..	..	..	..	3
Ophthalmia	..	..	..	..	..	..	..	..	..
Ornithosis	..	..	..	..	..	..	..	..	..
Paratyphoid	..	..	..	1	..	..	..	..	1
Plague	..	..	..	..	..	..	..	..	..
Poliomyelitis	2(1)	2	..	..	6(4)	..	..	..	10
Puerperal Fever	10(4)	1(1)	..	..	..	..	1	..	12
Rubella	..	13(10)	2(2)	1	6(5)	..	..	..	22
Salmonella Infection	..	..	..	1(1)	..	..	..	..	1
Scarlet Fever	6(4)	13(8)	5(4)	8(2)	..	..	..	..	32
Smallpox	..	..	..	..	..	..	..	..	..
Tetanus	..	..	..	..	..	..	..	..	..
Trachoma	..	..	..	..	34	..	2	..	36
Trichinosis	..	..	..	..	..	..	..	..	..
Tuberculosis	32(14)	26(18)	38(7)	6(1)	7(3)	3	1	..	113
Typhoid Fever	..	..	..	..	..	..	..	..	..
Typhus (Flea-, Mite- and Tick-borne)	..	..	..	..	..	..	..	..	..
Typhus (Louse-borne)	..	..	..	..	..	..	..	..	..
Yellow Fever	..	..	..	..	..	..	..	..	..

[1] Figures in parentheses are those for the metropolitan area.

NAVAL FORCES OF THE COMMONWEALTH.

Citizen Naval Forces of the Commonwealth.

Royal Australian Naval Reserve.

Appointments.—Robert John Knight is appointed Surgeon Lieutenant, with seniority in rank of 27th January, 1956, dated 9th March, 1960.

Royal Australian Naval Volunteer Reserve.

Appointment.—Thomas Arthur Sale is appointed Surgeon Lieutenant, with seniority in rank of 9th September, 1955, dated 28th December, 1959.

THE following appointments, changes, etc., are published in the *Commonwealth of Australia Gazette*, No. 78, of November 17, 1960.

ROYAL AUSTRALIAN AIR FORCE.

Permanent Air Force.

Medical Branch.

The following are appointed to a temporary commission, with the rank of Pilot Officer (Student):—James Edmund Anthony Gralton (0220799), 22nd April, 1960; John Herbert Plunkett (016536), 5th May, 1960.

Leo Edward McConvill (0220827) is appointed to a short-service commission on probation for a period of twelve months, 21st September, 1960, with the rank of Flight Lieutenant and with seniority as from 21st September, 1958.

The short-service commission of Flight Lieutenant T. J. Gardner (0218191) is extended to 9th December, 1963.

The resignation of Flight Lieutenant R. C. Hicks (0310770) is accepted, 24th September, 1960.

Active Citizen Air Force.

Medical Branch.

No. 21 (City of Melbourne) (Auxiliary) Squadron.—Squadron Leader A. S. Tredinnick (021945) is transferred from the Reserve, 23rd September, 1960.

Air Force Reserve.

Medical Branch.

The following Flight Lieutenants are promoted to the temporary rank of Squadron Leader, 9th September, 1960:—J. H. A. Floyd (033055), H. D. O'Brien (257895).

The following are appointed to a commission, 19th September, 1960, with the rank of Flight Lieutenant:—Donald Ramsay Hutton (277689), Ian Brownlie Wilson (277687), Clyde Francis Winzar (277688).—(Ex. Min. No. 39—Approved 11th November, 1960.)

Notes and News.

Dean of Medical Faculty, Monash University.

Dr. R. R. Andrew, of Melbourne, has been appointed Dean of the new Faculty of Medicine at Monash University, Melbourne.

New Premises of Ciba Company Pty. Ltd.

New premises recently constructed for Ciba Company Pty. Ltd. at Orion Road, Lane Cove, N.S.W., were officially opened on November 9, 1960, by Mr. R. W. C. Swartz, Parliamentary Secretary to the Minister for Trade. These unite under one roof all sections of the Sydney organization, namely, the Administrative Headquarters, the Pharmaceutical Division, the Sydney Branch of the Dyes Division and the Plastics Division.

Corrigendum.

HÆMOPERITONEUM OF UNUSUAL ÆTIOLOGY.

WE are informed that the two following errors have occurred in the paper by Dr. A. Rumore, "Hæmoperitoneum of Unusual Ætiology", in the issue of December 3, 1960: (i) On page 892, Table I, first column, second section, the number of cases of ruptured spleen should be 21, not 2. (ii) On page 895, in the list of references, the number of cases recorded by H. Ellis, P. W. Griffiths and A. MacIntyre should be 129, not 1229.

Deaths.

THE following deaths have been announced:

BENNETT.—Agnes Bennett, on November 27, 1960, in New Zealand.

FITZHARDINGE.—Clara Rebecca Fitzhardinge, on November 28, 1960, at Randwick, N.S.W.

Diary for the Month.

DECEMBER 20.—New South Wales Branch, B.M.A.: Hospitals Committee.

DECEMBER 27.—Tasmanian Branch, B.M.A.: Southern Subdivision.

DECEMBER 29.—Tasmanian Branch, B.M.A.: Northern Subdivision.

Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment mentioned below without having first communicated with the Honorary Secretary of the Branch concerned, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

New South Wales Branch (Medical Secretary, 135 Macquarie Street, Sydney): All contract practice appointments in New South Wales.

South Australian Branch (Honorary Secretary, 30 Brougham Place, North Adelaide): All contract practice appointments in South Australia.

Editorial Notices.

ALL articles submitted for publication in this Journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations, other than those normally used by the Journal, and not to underline either words or phrases.

Authors of papers are asked to state for inclusion in the title their principal qualifications as well as their relevant appointment and/or the unit, hospital or department from which the paper comes.

References to articles and books should be carefully checked. In a reference to an article in a journal the following information should be given: surname of author, initials of author, year, full title of article, name of journal, volume, number of first page of article. In a reference to a book the following information should be given: surname of author, initials of author, year of publication, full title of book, publisher, place of publication, page number (where relevant). The abbreviations used for the titles of journals are those of the list known as "World Medical Periodicals" (published by the World Medical Association). If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full data in each instance.

Authors submitting illustrations are asked, if possible, to provide the originals (not photographic copies) of line drawings, graphs and diagrams, and prints from the original negatives of photomicrographs. Authors who are not accustomed to preparing drawings or photographic prints for reproduction are invited to seek the advice of the Editor.

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